
TOWARDS WORLD PROSPERITY

Towards World Prosperity

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THROUGH INDUSTRIAL AND AGRICULTURAL
DEVELOPMENT AND EXPANSION

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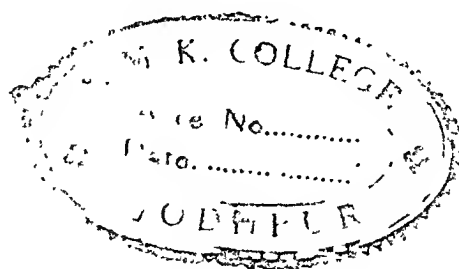
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HARPER & BROTHERS PUBLISHERS
New York and London

FOREWORD

All the views expressed in this book, either by the editor or by the authors of individual chapters, represent only the personal views of the individual expressing them. They should not be taken as representing the views of Governments, or of the individual departments, ministries, agencies or business concerns by which the authors are employed.



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INTRODUCTION

At the end of World War II, making World War III impossible seems the most important task ahead. If the new peace is to endure, the United States must accept a share of international responsibility fully commensurate with our size and power. Today, most Americans seem determined to accept that responsibility. Our advocacy of and adherence to the United Nations and related specialized international organizations is a good omen of the firmness of that decision.

Peace and prosperity are interdependent. To most peoples of the world, freedom from fear would have little meaning without freedom from want. The difficult and as yet unsolved problems of establishing political cooperation and security between nations are much on the minds of all thinking persons. The corresponding problems of establishing the conditions for economic security and progress are not so generally recognized. This book is limited to those economic problems, leaving the broader problems of political statesmanship for others who are better qualified.

The vital possibility lies in maintaining employment in the developed countries and in also using the technical information and financial powers of the United States and other leading nations *to help other nations help themselves*. How this might raise both production and standards of living is set forth in Chapters I and II.

The rest of the book is devoted to the problems, opportunities, and plans for economic development in selected countries or regions around the world. Originally it was expected to include chapters for Japan and for additional regions of South America, but they were not ready in time. Each country or regional chapter is written by a person whose experience has given him extensive knowledge of the country or area concerned and has been reviewed by other experts. As editor I have tried to see that the several chapters have all addressed themselves to the basic economic problems. Each author has, however, been free to emphasize those aspects that seem most important to him. Each one takes the full responsibility for the views he expresses. My thanks and appreciation are due to the chapter authors for their willingness to undertake this task, many in the face of pressing official duties, and for their care and patience in the various revisions of their chapters. Thanks are also due to the many others who aided by their criticism of various chapters. Chapters I and II are based on three articles of mine

originally published in *Free World*, in 1944 and early 1945. I am indebted to the editors of that magazine for permission to use them here.

In cases where the contributors have used current conditions to illustrate postwar problems in the country or region discussed, the rapid pace of events will soon provide new facts and new situations. But the fundamental problems of establishing greater prosperity depend on the physical resources, the cultural and institutional patterns, and the relative stage of development reached in each country or region. It is these long-range factors that are the main focus of this book, and they continue despite the shifting scene of current events.

In the summer of 1946, I worked several months in Greece as a member of the Mission sent to that country by the Food and Agriculture Organization of the United Nations. On this assignment I saw and felt the color of life in a country still over-populated on the land and underdeveloped in its industries. This firsthand experience has confirmed the basic beliefs set forth in this book. Real prosperity for the world can come only if the rate of development of processing, manufacturing, and other non-farm industries can be speeded up to match the technical progress already made in agriculture and the still greater technical progress which lies ahead as the agricultural methods of modern science spread over the world.

Two great international conferences—at Hot Springs on Food and Agriculture and at Bretton Woods on Money and Finance—laid plans for specific measures by which the United Nations could help stimulate an expanding economy around the world. The Economic and Social Council of the United Nations and the proposed International Trade Organization are further means toward the same ends. My associates and I hope that this book will be useful in helping American businessmen, students, and the general public understand some of the specific ways these programs can go into action in various parts of the world, and so contribute toward making “the Century of the Common Man” become a reality.

MORDECAI EZEKIEL

Washington, D.C.
October, 1946.

TOWARDS WORLD PROSPERITY

ECONOMIC EFFECTS OF THE WAR— WORLD VIEW¹

Conversion from war to peace involves *what* needs to be done to make a prosperous world, and *how* to get it done. Before examining these questions, it is necessary to get as clear a view as possible of how the war has changed the pre-existing economic system.

The impact of the war varied widely in different industries and different countries. When the war ended, the major industrial countries of the world had been at war from four to six years, and actively preparing for defense or at war for ten. The Orient had lived under the threat of war or at war ever since the Manchurian "incident," fourteen years before. In Ethiopia, the first flames of the coming Fascist bid for world power flared as long ago as 1935, and in Spain in 1938. For ten to fifteen years—half a generation—most of the industrial and commercial nations of the world shaped their activities under the threat or actuality of war. Before we can consider the economic future of those countries, we must strive to get a clear view of what that long period has done to their economic systems. In using the phrase "effects of the war" we will include the effects of the period of preparation as well as of actual combat.

The effects of the war on the economies of the various countries may be separated into the tangible and the intangible effects. On the tangible side are the changes in the structure of economic activity, in what was produced and in the resources for production. On the intangible side are the changes in the ways of doing things, in the organizational controls and in the financial arrangements.

TANGIBLE CHANGES

Agriculture

The tangible effects of war on agriculture, while marked, were less than those on industry. War shut off accustomed sources of food supply for many countries, and forced a greater dependence on domestic supplies or on new sources of imports, yet the general structure of food production and consumption was not revolutionized. During the war, food was generally

¹ Chapters written by individual experts are signed by them. All others are by the editor.

scarce, of course, and of poorer quality. In some invaded or occupied regions malnutrition was extreme. Every warring nation imposed food rationing, more or less severe in nature. From the western extremities of Europe to the eastern tips of Asia, most civilians were chronically hungry. The average rations varied from just adequate for essential nutritional needs (as in England and, until her collapse, in Germany) to below minimum needs for health or even for existence, as in most of the Axis-occupied portions of Europe and in the Soviet Union. Only farmers, able to supplement or exceed the official rations, were free from real hunger.

Agriculture was changed materially during the war. In Axis Europe, shut off from its previous imports of grains, livestock feed and fats, there were marked reductions in livestock numbers, while acreages of crops for direct human consumption, such as food grains, potatoes and vegetables, were expanded.

England, with imports cut off from the Continent and threatened from overseas, greatly expanded the volume and intensity of her agriculture. Meat animal numbers and production were reduced; pasture lands were put into tilled crops, especially wheat or vegetables; and numbers of dairy cows were expanded. As a result, the caloric value of the food produced in the United Kingdom was increased by more than half. Together with strict rationing, its dependence on imported food was greatly reduced.

The U.S.S.R. developed new agricultural areas in her eastern regions, and greatly expanded food output there to replace in part the heavy losses to her food supplies in the Ukraine and other major agricultural regions overrun by the invaders.

Agriculture in the overseas exporting countries was affected both by war demands and by war interruptions to transport. Enlarged food demands for their own armed services and their allies overseas, backed up by governmental measures to expand and redirect food production, stimulated great expansions in agricultural output in the U.S.A. and Canada. The total volume of food production increased 30 per cent in the U.S., and its nutritive value, especially in the protective elements, increased by even more. In Canada, the aggregate increase also was about 30 per cent. More distant exporting regions, like Australia, New Zealand, and Argentina, found their export foods piling up on their hands during the period of greatest shipping shortages. Subsequently, the demands for the armed forces in the Southern Pacific, and for concentrated foods like meats and butter in the United Kingdom, took all they could supply. Stocks of grains and wool at the end, however, were still heavy in the Southern Hemisphere, and production of these products as well as butter were cut back below normal levels. The more exotic exports, coffee, bananas, cocoa, spices, etc., were affected by shipping shortages. The great Oriental exports of rubber, silk and vegetable oils were almost completely cut off by Japanese successes. How far the

wartime synthetic substitutes for rubber and silk will replace them in the post-war market, and how much the producing plantations have been damaged by the Japanese, is still uncertain. In the areas thus far examined, however, the damage to intensive plantations seems to have been only slight and sporadic.

Some countries outside the zone of combat had previously been heavily dependent on food imports to maintain their supplies. These included exporters of speciality crops, like Cuban sugar or Central American bananas, or of minerals like Bolivian tin and Chilean nitrates. The shortage of shipping to move in their usual food imports, and in some cases to take their usual exports, created severe food problems for many of these countries, and forced them to develop larger home supplies of food. The easing in ocean shipping from late 1942 on began to lighten pressures toward self-sufficiency in such areas.

Along with the changes in the amount and intensity of agricultural production, there were many new applications of science to meet the food demands of war. In Germany and the Scandinavian countries, the feed shortage was partially offset by feeding cows on cellulose made from wood and on urea, a synthetic chemical compound that supplies nitrogen in place of protein. In the U.S.S.R., artificial insemination of cows, and "vernalization" of seed to shorten the growing season speeded up the recovery or expansion of production. In the U.S.A., soybean and peanut production were expanded many fold to replace the tropical oils previously imported, while many new industrial products—synthetic rubber, plastics and paint—were developed from their products. Food preservation similarly was modified to meet war needs, with dried eggs, dried milk, and many other forms of dehydrated and compressed foods saving shipping and storage space. Many of these applications of science will carry over after the war, in enlarged capacity to produce and in improved possibilities of efficient distribution.

Liberation unfortunately did not bring an end to starvation. While the fighting continued, the liberated areas back of the lines, such as southern Italy or later France and Belgium, found their previous supplies from Germany cut off, their transportation systems badly damaged, and what transportation remained pre-empted for military purposes. Even after V-E Day, food continued to be scarce because of the damage to port, rail and other facilities, the lack of coal to start restoring rail and utility operation, and the reduced farm output. U.N.R.R.A. was helping materially to feed the poorest areas in eastern Europe, but western Europe was pretty much on its own, except for displaced persons. The cutting off of Lend-Lease in the fall of 1945 further complicated food troubles for liberated areas, for they now had to face financial difficulties as well as physical difficulties in getting enough food. The disorganization resulting from military government of the ex-Axis regions and the slow restoration of normal govern-

mental authority in the liberated areas, the acute monetary inflation in many areas, the continued shortage of coal, and widespread crop failures in 1945, made the winter and spring of 1945-46 the coldest and hungriest faced by the people of Europe and Asia—and this time, shared in by the people of Germany and Japan. It is hoped that by the 1946 harvest, and at the latest by 1947, both agriculture and industry will be functioning again sufficiently to provide more nearly normal supplies of basic necessities throughout most of Europe.

The war itself did not greatly change the make-up or character of world agriculture though it produced temporary reductions in some areas, and expansion of capacity in others. In many countries which had already been developing autarchic or "live-at-home" policies in the 30's, the war greatly intensified these developments. In overseas exporting countries, the Northern Hemispheric exporters were generally stimulated to increase output, while those in the Southern Hemisphere were held down by limited shipping. In much of the rest of Asia and South America, outside of the limited regions dependent on the export of intensive products like coffee or rubber, agriculture went on in much the same generally self-sufficient way as before, with population pressures and generally inadequate diets for all but a privileged few at the top. In the areas of widespread intensive combat—limited areas in China, individual Pacific islands like Guadalcanal or Tarawa, savagely fought-over regions like southern Italy and Normandy, large portions of Greece and Spain, great stretches of eastern Europe and Russia, and the cities of Germany, Poland, and Japan—bombing, battle and fire left desolated fields and destroyed villages, equipment and livestock; ravaged territories that will take years to rebuild. This actual devastation has reduced the present agricultural output of some areas to 50 per cent. Crop production may be back to normal by 1947 or 1948. It will take several years to rebuild villages and restore productive equipment. In Europe and the U.S.S.R. it may take a decade or longer to restore livestock—work animals, cattle droves, hogs and sheep—back to prewar numbers.

Industry

Though men eat much the same food in war as in peace, they use their factories to make greatly different things. In World War II, with its enormous emphasis on machines and technology—machine guns, tanks, planes, motor transport, self-propelled artillery, anti-aircraft, atomic bombs—that was truer than ever before. In 1918, three and one-half tons of equipment were sent overseas for each American soldier, on the average; in 1943, eight tons were required. The munitions produced in the U.S.A. had a total value of 15 billion dollars, in 1943; with lower prices, we produced 60 billion dollars' worth of munitions—more than four times as much. This

mechanized character of modern war forced every great industrial nation—Germany, Japan, France, the U.S.S.R., the U.K., and the U.S.A.—to expand its munitions industries, and to contract its normal production of peacetime products, especially durable goods for consumers and housing. That involved an enormous expansion in metal-producing and metal-working industries, and in war chemicals, especially explosives. Peacetime metal products for consumers were greatly reduced or eliminated, while clothing and drygoods were standardized and reduced.

The forced draft of war demands stimulated the full use of productive powers in all the warring countries, particularly in those which had been unable to achieve full use of their manpower or resources in time of peace. Hitler early used his armament program to absorb the German unemployed. As a result of putting her unemployed to work several years before the outbreak of actual hostilities, Germany not only piled up an enormous aggregate of war materials, but also raised somewhat the consuming standard of her own citizens, Jews and Socialists excluded. As the Fascist threat became clearer, the Soviet Union diverted its growing industrial plants to preparation for war, and cut into the goods for citizens which had only recently begun to expand as the successive plans passed their heavy-industry-development phase.

In the U.S.A., the defense program after the fall of France in 1940, and the greatly intensified war production program from December 1941, called into use the surplus man and woman power that previously had been unemployed, unused or only partially used. New plants were hastily built and put into operation, existing plants were speeded up to two-shift or even three-shift operations, hours per week were lengthened, and holidays were suspended "for the duration." Unemployment fell from seven and one-half millions in 1940 to under one million at the peak of war production. Twelve million men and women were mobilized for war, while meantime the civilian force at work was increased from 45 million to 52 million. Enormous quantities of airplanes, cannon, ships, landing craft and other military goods, were produced by mass production methods—standardization and subcontracting of parts, subassembly of components and organized line assembly of the final products. These methods previously had been used only for automobiles, radios and a few other mass-produced consumer goods. Production of competing metal goods for civilians—autos, household equipment, hardware and other durable goods—was almost completely suspended. Production methods and closely guarded technical secrets were pooled both between producers in each country and between the war industries of all the Allies. This co-operation in the introduction of the most improved methods at all points in all producing concerns greatly aided the expansion of production.

It is difficult to measure production of tanks against automobiles, ships

against houses, and bombing or fighting planes against transports or pleasure craft. The wartime indexes of production and prices are therefore subject to a wide margin of uncertainty. Even so, the aggregate volume of all goods produced in American factories at the peak of the war effort was more than twice as much, in physical volume, as was being produced before the Defense Program began in 1940. Production of durable goods, where most war demands are centered, rose to over two and one-half times prewar levels; production of transportation equipment to seven times the prewar levels. This enormous expansion in military production was made possible only by a tremendous expansion in the American factory and other productive equipment. Large sectors of peacetime industry were converted to war production. The conversion was almost 100 per cent in the metal-working and other capital-goods industries, to the extent they were suitable to such utilization. At the same time, twenty billion dollars' worth of new factories and shipyards were built. This was an increase of about 50 per cent in the productive capacity of American industry, and of over 100 per cent in its productive capacity for metal-working industries.

Data on changes in manufacturing are not so fully available for other countries. The figures that are available show a 205 per cent increase in Canada and 79 per cent in Australia. The U.K. with most of its manpower under arms and material increases in domestic food production, and with little previous unemployed manpower to draw on, still maintained its wartime industrial output at about the previous maximum peacetime levels. The change in the composition of production was far more marked in England than in the U.S.A., of course, with production of non-food products for civilian use almost completely eliminated, and with military products—again largely metal or chemical in nature—representing about two-thirds of the aggregate wartime output.

The industrial structure of Germany, and the captive industrial economies of France, northern Italy, Czechoslovakia and Austria, was modified in much the same direction as the English economy. Due to the almost complete absence of the normal imported raw materials of cotton, wool and oil, production of synthetic substitutes was one great object of the expanded Axis chemical industries. With the aid of forced labor and of contributions from the slave economies, German industrial production in 1941 and 1942 reached aggregate totals well in excess of previous peacetime peaks. The dislocation of internal transport by bombing, the accumulating destruction of both housing and industrial facilities, and the simultaneous invasions from all sides before her military machine finally crumpled, reduced large portions of her new industries to ruin—except for direct munitions industries. However, the total destruction of German industry as a whole was less complete than the pictures of ruined towns indicate. The re-

removal of industrial equipment as reparations has still further reduced German industrial capacity.

In the Pacific theater, the impact of the war on Japan was somewhat parallel to that on Germany. Due to enormous stockpiles of cotton, steel and iron scrap and rubber, Japan at first enjoyed abundant supplies of food, oil and rubber as a result of her conquests. She converted much of her own industry to military production, established subsidiary heavy goods centers on the conquered Asiatic mainland, and attempted to increase cotton production in portions of occupied China. Toward the end, as her shipping failed, she began to suffer for food. In Japan, as in Germany, much of the heavy-goods potential created for war was crippled or destroyed before the fighting finally ended though textiles and other light industries were less damaged. Many of the cities were laid waste, and some were even more completely destroyed than were most German cities.

The industrial effects on China were much the opposite of those on Japan. Most of China's previous commercial and financial centers were occupied by the enemy. Tens of millions of people migrated to the western unoccupied regions, taking with them portions of their industries. New industries, generally of a relatively simple character, were established in sections of the country previously remote and undeveloped. The expansion of industrial co-operatives provided a new stimulus to industrial development in many areas. Shut off from machines, fuel and power, war industries were difficult to contrive. Smuggled goods from the occupied portions supplied a large part of the manufactured products available. As the Allies began to reopen transportation routes to China, some heavier war industries could be established. They were very small at the end of the war, however, compared to the destruction of factories in the invaded sections.

In some regions not despoiled by invasion, the war demands stimulated a notable increase in industrial production, particularly of metal products for military use. Siberia and Australia made relatively enormous increases in their industrial capacity and output. As compared to prewar, the 1943 industrial output was 73 per cent larger in Australia. The increased industrial output in the uninvaded regions of the U.S.S.R. was sufficient to offset the tremendous losses at Kharkov, Dnepropetrovsk, Stalingrad and other ravaged industrial centers. The absolute annual magnitude of the maximum wartime increases in industrial output (in American dollars at 1940 levels of prices) was about half a billion in Australia, 2.7 billions in Canada and 50 billions in the U.S.A.² These expansions in industrial regions untouched by physical destruction constitute a large part of the world's reservoir of increased industrial capacity with which to start repairing the ravages of war.

² This is the increase after eliminating that part due to changes in price levels.

War Destruction of Houses

In addition to the effects of military action on farms, factories and transport, the effect of bombing and fires on housing have created a great rehousing problem for the devastated areas. After World War I, about one million houses were rebuilt in northern France—400,000 completely rebuilt, 600,000 repaired. The damage to French housing in this war was over three times as large. In addition, somewhere between one-quarter and one-half a million dwelling units have been destroyed in England, and about two million have been damaged more or less severely. In the cities and villages of the invaded portions of the Soviet Union, millions of dwellings, public buildings, and factories were destroyed. In southern Italy, the first post-war census showed hundreds of thousands of houses destroyed, and many more seriously damaged. In Axis territory, large portions of great cities like Rotterdam, Hamburg, Frankfurt, Berlin, Tokio, and Yokohama were destroyed. What the total destruction was in Europe, and how seriously the farms, homes, industries and transport of eastern Asia were damaged before the end is still unmeasured. The millions of homes and thousands of factories destroyed represent the accumulated capital from generations past. For comparison, the maximum number of dwelling units ever built in a single year by the U.S.A.'s great construction industry was 894,000. Rebuilding merely this physical destruction would take all the surplus that modern industry could produce for a decade or more—even if it were kept producing as all-out for peace as it produced for war.

Raw Materials

On the raw material side, the end of the war finds the world with many of its scarcest raw materials—copper, zinc, oil, lumber—seriously depleted. Offsetting this in part, at least for the time being, are the mineral and other resources newly discovered under the pressure of the war emergency, the technical advances made in aviation, chemistry, metallurgy and other lines, and the war-expanded capacity to produce and process aluminum, magnesium and plastics. The eventual industrial value of the war's greatest discovery—atomic power—may not become clear for a generation or more.

Manpower

The greatest loss, of course, was in human lives—humans destroyed or maimed in body or mind, humans uprooted from their homes and traditions and scattered to distant lands, young men seared by years of combat. Adding in the millions more in Germany, Japan and Italy whose young lives have been blighted by the twisted mentalities of hate and conquest of the Fascist creeds, the world faces a long period of psychic reconstruction and re-education as well as physical rebuilding before it can restore the smoothly functioning co-operative activities of which modern civilized life consists.

In every warring country, men withdrawn for the armies were replaced by women, children and the aged, in industry and agriculture. Daily hours of work were lengthened, and days worked per week or month increased. Some of these changes may carry over into the post-war period, in a larger proportion of the women prepared to work, and perhaps in youngsters unwilling to return to school. In the United States, for example, it is estimated that providing reasonably full employment after the war will mean making work places for at least ten million more people than were at work in 1940. (In that year, unemployment ran up to seven and one-half millions.)

The actual reduction in the male working force may pose a very serious post-war problem for countries such as Germany, Japan and Russia. Particularly in Germany and Japan, a high proportion of their able-bodied young men were either dead or seriously crippled by the end of the war. This reduced proportion of effective manpower will be a serious brake on the restoration of prosperity in these countries, no matter how far-sighted the Allies are in providing the surviving population with opportunities to recreate their economic lives. In addition, the almost complete extermination of the Jews of central and eastern Europe, who had carried on many of the mercantile and small industry functions, may leave an economic vacuum difficult to fill.

INTANGIBLE CHANGES

The wartime changes in the physical structure of production, consumption and resources involved very great alterations in the methods of economic control, involving public direction and public financing. While some of these controls may soon vanish, others, such as governmental direction or supervision of international trade, may persist far into the peace.

Government Control

The physical redirection of agriculture and industry was achieved by extensions of government control over private activity to an extent never dreamed of before. Prices, production, raw material allocation and utilization, imports and exports, credit, transportation, consumption—all were marshaled and directed to the ends of total war. Wages were controlled, the right to strike was abolished or abridged, and men were told where to work and at what. The ways in which this militarization of the economy was carried out varied from full socialism as in the U.S.S.R., or direct and brutal domination of all economic forces as in Germany, to government direction and guidance. This was exercised in democratic countries through centralized government bureaus, such as the U.S.A.'s War Production Board, Office of Price Administration, War Manpower Commission, and War Food Administration; Canada's Wartime Prices and Trade Board

and Department of Munitions and Supply; or the more subtle methods of central direction used in the United Kingdom. In each of the warring groups—throughout Axis Europe at the height of Hitler's conquests, and among the United Nations opposing him—the economies of the countries were forged together internationally into a great unified whole, consolidating all their resources for the single end of battle. Transport, weapons, food, materials, men—all were thrown together into a single unified pot regardless of previous tariffs, trade barriers, costs, or normal currents of trade. Although prices, wages and profits still continued, and although pressures of various groups for preference still influenced public actions and decisions, the usual economic calculus of markets, prices, wages and profits almost everywhere lost its force as the final determinant of the direction of economic activity. Governments shrewdly played upon these relics of peace to help bring about the results they desired; but prices were employed as merely one of the stimuli, along with purchase orders, rations, priorities, allocations and directives, to serve the ends of war. How rapidly and how far this war socialism should or can be converted to the previous peacetime ways is itself one of the problems of reconversion and reconstruction.

The methods of consciously-planned international allocation of resources, as developed in the Combined Food Board, the Combined Materials Board, and the Combined Shipping Board, carried over to some extent into the relief period under U.N.R.R.A. The problems of preventing price deflation or inflation in the readjustment or post-war periods similarly require some extension to peace of the methods of price control and exchange stabilization developed during the war. Most great nations succeeded far better in controlling prices during this war than during World War I, and kept prices in wartime under some degree of control. In many liberated areas and in the defeated axis countries, however, occupation currencies and shortages of goods produced severe post-liberation inflations, control of which poses severe problems for the new governments.

As one observer reported after visiting Europe just after V-J Day:

"Financial, economic, and monetary conditions in Europe have been disrupted about as much as Hiroshima was disrupted by the atomic bomb. There was practically nothing left of the machinery by which modern economic life is managed. I do not want to exaggerate the physical destruction. . . . Many of the cities have been destroyed, but what is much more thoroughly destroyed is the whole tissue of financial and monetary systems. Transportation has been severely damaged. Conditions in Central Europe are comparable to conditions after the Thirty Years' War. A new international monetary system will have to be worked out and its normal functioning re-established. It is the money system that has been most rom-

pletely destroyed, and in modern economic life money is an essential element."³

The shift to the left, stimulated by the war, has resulted in progressive post-war governments in many countries. In a number of cases, notably the U.K., France, and apparently Italy, the permanent policy will be one of far more positive intervention of government in economic activity than before the war. Nationalization of selected industries, advance planning of industrial development, and continuing controls over finance and foreign trade, are some of the means to be used. In eastern Europe, the evolving governments appear to be departing somewhat further from the all-out socialism of the U.S.S.R. than many originally expected; even so, these governments seem determined to take a large part in economic policy in their own countries. Although it is too early yet to tell how far this swing to the left will go, there is no question that the common men who fought to protect their lands from aggression, or who dared starvation and torture in underground movements, have no intention now of using their new found freedom merely for the benefit of the limited upper class, especially when they know that many members of that upper class, fearing communism more than Hitler, helped bring on the recent holocaust.

Finance and War Debts

Although the nations generally financed this war far more out of current taxes and less out of borrowings than World War I, the growth in public debt was fantastic.

The increase in national debt during this war was more than twice as large as in the first World War for the U.K., almost three times as much for Australia, more than five times as much for Canada, almost eight times as much for France, and more than ten times as much for the U.S.A. Russia added billions of rubles to her debt, while the increase in Japan was more than one hundred times as large as during the first World War.

This great growth in public indebtedness is important on the asset side as well as on the liability. In the U.S.A., for example, war debts of the government represent a large part of the wartime savings of business and the general public, aggregating together over 200 billions of suspended buying power. This great fund of buying power, with some of it widely distributed, has large potentialities both for good and for ill in the post-war period.

Besides these internal debts, the war brought about great changes in the international debt position, both as between governments and between individuals. England sold a large part of her overseas investments and owes

³ E. A. Goldenweiser, "Impressions of Europe—Summer, 1946," talk before U.S. Dept. of Agriculture Outlook Conference, Dec. 3, 1945.

other countries large amounts in sterling for war supplies. The U.S.A. acquired large new overseas assets, mostly in the ambiguous form of Lend-Lease accounts. In view of the great difficulties caused by the international war debts after the last war, it might have been better if our wartime ship-

NATIONAL DEBTS OF VARIOUS COUNTRIES IN MILLIONS

Country	Unit	Selected years				Increase	
		1913	1920	1938	Recent date ¹	World War I	World War II
U.K.	Pounds sterling	656	7,829	8,026	24,070	7,173	16,044
Australia	Pounds	313	767	1,275	2,589	454	1,314
Canada	Canadian dollars	261	2,539	3,253	15,700 ²	2,278	12,447 ²
France	Francs	33,538	177,872	420,555	1,542,076	144,334	1,121,521
U.S.A.	Dollars	1,193	24,299	37,165	278,625	23,106	241,460
U.S.S.R.	Rubles	—	—	20,900	146,174 ²	—	125,274 ²
Japan	Yen	2,573	3,234	12,817	120,000 ²	661	107,183 ²

¹ U.S.A.—Dec. 12, 1945; Canada—Dec. 31, 1945; United Kingdom—Nov. 24, 1945; Australia—March 31, 1945; U.S.S.R.—Dec. 31, 1945; Japan—1944; France—Oct. 31, 1944.

² Estimated from various reports. The figures for Japan include government bonds only. There are 100 billion yen of other government obligations for which the future administration of Japan may or may not assume responsibility. Further issues of 7 billion yen have also been reported.

ments to our Allies overseas, once we were in the war, had simply been regarded as part of our war expenditures rather than entered on the books as Lend-Lease expenditures involving some unknown degree of post-war obligation. Other exporting countries, notably, Argentina, Switzerland and Sweden have built up large balances of gold, dollars, or sterling due them from abroad, which greatly altered their financial position and raised their ability to finance their own industrial development after the fighting stops.

Scrambling of Ownership, Internally and Internationally

Throughout large areas of the world, fascist looting or military action upset all old standards of ownership. The seizure of properties, the destruction of records, and the torturing, killing, or driving off of previous owners created a condition of scrambled ownership which can never be restored to its previous condition. In many areas of the world, and for many millions of people, current possession and use was the only thing that counted. This situation may profoundly influence the future development, for in many such areas public holding of productive assets may be the only feasible alternative to turning properties over to people or concerns which have no valid or equitable claim to them.

Summary

The end of the war found the world with a greatly distorted set of economic resources and arrangements. In some countries and some industries,

war had stimulated new and unbalanced growth—moderate in agriculture, large in industry. Many irreplaceable resources had been seriously depleted, and the human resource damaged and warped. The ancient physical heritage of much of Europe and of Eastern Asia was in shambles, wrecked or disorganized. Yet the shock and ferment of war may have given new ideas and new vision to the masses of people in many undeveloped nations; while the opportunity to rebuild their lives and governments in peace and security will lend fresh vigor to many peoples of the Old World. The ideas of the Century of the Common Man have taken deep root in many countries. What can the world do with its agriculture and industry, with its business and financial arrangements, to satisfy these hopes and desires? That is the great challenge of the post-war world.

INDUSTRIAL POSSIBILITIES AHEAD

This chapter examines the physical development needed to move toward freedom from want and the industrial and financial possibilities of taking those steps. The economic expansion and prosperity actually achieved will depend in large measure upon the success of four international undertakings: (1) the international security organization; (2) the new Monetary Fund and International Bank; (3) the program for agricultural expansion of the international Food and Agriculture Organization; and (4) successful agreement on, and operation of, measures to reduce trade barriers, establish greater freedom of trade, and control cartels, proposed for the coming international trade conference. Here we will outline some of the physical steps which might be taken during the post-war decade, on the assumption that these international undertakings are vigorously followed through.

Restoration of prewar productive capacity in many of the devastated areas may be accomplished in a surprisingly brief period, excluding those industries, such as heavy German or Japanese industries, which are prohibited ex-enemies for the future. All the major belligerents greatly expanded their metal-working and chemical industries for munitions purposes. In some cases, as in Soviet Asia, they developed great new industrial areas. These war industries can be used, with only minor reconversion, to turn out the machine tools, processing equipment, rails and rolling stock, building materials, farm machinery and other physical goods for the restoration of damaged productive equipment. Even if only a fraction of the facilities, manpower and expenditures which went into munitions production at the peak of the war effort were applied to reconstruction, the job could be carried through within the first few years of peace. Rebuilding of devastated housing will be much slower, however. Temporary housing may be the rule for a considerable segment of the populations for many years ahead.

In many areas of Europe new factories will replace old buildings and old equipment which had long been obsolete. In addition, war forced many countries to learn and apply the methods of pre-planning and mass production which have made American industry both so productive and so given

to continued improvement. These new modern machines and modern methods may eventually increase the productive capacity of these countries well above their traditional levels.

In addition to the munitions industries of the invaded countries, a considerable part of the enormous metal-working facilities of England and the U.S.A. are available to speed the reconstruction of other countries, when loans for reconstruction projects from the Export-Import Bank, the International Bank, or other agencies provide the necessary funds.

Far more exciting than the restoration of prewar output, however, are the possibilities of output and standards of living improved far above prewar levels. The wartime expansion in the U.S.A., with industrial production doubled and food production increased one-third, has shown how enormous are the productive capacities of modern industry and agriculture when assured of a market. Industry and agriculture in Canada and in the uninvaded portions of the U.S.S.R. made comparable gains. For the advanced industrial nations, such as the U.S., Canada and the U.K., the long-pull post-war economic problem is largely one of maintaining buying power for their products. If markets for the goods can be maintained, farm and factory products can be produced at levels substantially above prewar norms.

For most remaining countries the problem is greatly different. These other countries have been far less industrialized. The great increase in industrial production which characterized the rapid rise of world prosperity in the hundred years prior to World War I occurred mostly in a limited area extending roughly from St. Louis and Chicago on the West, to Danzig and Prague on the East. Concurrently with the development of the specialized industries of this area, there was a great increase in raw material and handicraft production in the remaining areas of the world. The colonial exporting areas gained somewhat in the industrial products they got back for their exports. Even so, the largest part of the increased production was retained by the industrial areas for themselves. Malayan copra producers, Bolivian tin miners, Argentinian beef gauchos, South African gold and diamond miners and Alabama cotton sharecroppers had only a meager share in the rising living standards of Liverpool, Providence or Hamburg.

The further rise in industrial and agricultural productivity in the inter-war period resulted in the raw material exporting areas expanding their production beyond the quantities that could be used effectively in all the raw material importing countries and regions. Although steps toward industrialization were taken in many areas in the predominantly colonial regions, improving agricultural machinery and techniques made previous workers unnecessary in agriculture at a more rapid rate than industrial expansion provided alternative work for them. Governments devoted far more effort to improving agriculture than to expanding industry. Agricul-

tural nations continued to develop capacity to turn out raw materials faster than the material-consuming industries of the world developed uses for the materials. Both farm products and farm workers tended to pile up in "unsaleable surpluses."

The pressures of mounting raw material supplies and declining raw material prices accentuated the tendencies toward economic autarchy which were already present in Mussolini's "Battle for Wheat" and other pre-Nazi nationalistic pressures. The cessation of American foreign lending in 1928, and the subsequent Great Depression with its sharp declines in prices and employment, sharply intensified the "live-at-home" policies and the raw material surpluses, and led to world-wide development of autarchic policies in the dark days of the 30's. This entire process must be reversed if the present hopeful plans for more world trade and an expanding economy throughout the world are to succeed.

Raw Materials and Fabricating Facilities Must Be Balanced

The fundamental task for the period ahead is to maintain a balanced expansion in both industrial and agricultural output. The balance must be such as will expand markets for foodstuffs and other raw materials as rapidly as the output of raw materials is increased, while protecting and conserving the basic resources of soil, water and forests. The tractor, the auto and truck, electric power and other power-operated machinery has enormously increased agricultural output per man in North America, Australia, the U.K. and the U.S.S.R. Hybrid corn and other crop developments, better care of soil and water, improved feeding and breeding of livestock and disease and pest control, are increasing the potential agricultural output per *acre* almost as well as per *manhour*. Chemistry and technology are supplementing natural products with new materials—rayon, nylon, synthetic rubber, plastics, plywood. Industrial uses of atomic energy may be just over the horizon. Unless special efforts are made to develop industrial outlets for these expanded raw materials and energy at corresponding rates of consumption, flooded raw material markets may again deadlock the upsurge of prosperity, and lead once more to unemployment and starvation in the midst of plenty.

It is imperative that industrial development be encouraged on a far more massive and widespread scale. This will be in the interest of general world prosperity, and will directly provide the means to raise standards of living in the less developed nations.

It is easy to see why this is so. Labor plus tools and training can achieve infinitely more than labor alone. The gardener with a wheel-hoe can care for triple the crops of a man with a hand-hoe—yet a wheel-hoe costs only about \$5 and lasts for a decade of use. The rise in labor efficiency in wheat

production from the sickle to the cradle, the cradle to the binder, and the binder to the combine-harvester, is classic. The typical European peasant, harvesting with a cradle, can produce 100 bushels of breadgrain from a year's work. One man on an average family-sized wheat farm in the Great Plains of North America, harvesting with a combine, can produce 2,000 bushels from a year's work. Throughout Europe, even in London, many goods are delivered by hand-operated carts and pedal-driven trucks. Automotive equipment could increase the efficiency many fold. The shift from the hand-operated forge of the one-or-two man tinsmith's shop of the medieval type bazars still common in the Near East to the conveyor belts, pre-planned operations and assembly lines of modern mass production factories can enormously increase the return from a day's work. Such shifts have made it possible to sell complex modern miracles like electric light bulbs, radio tubes, flashlight batteries, photographic film and standard pharmaceuticals, for a few cents a unit or a bottle.

When a country has large numbers of workers and little capital, it must concentrate that capital on the most crucial spots, such as railroads and ports, and use hand labor elsewhere in place of the simplest machines. The profligate use of labor of the Chinese coolie and the Indian peasant are familiar examples. In such countries, the wise investment of even modest amounts of capital by Western standards may raise the per capita levels of production many fold.

High Income and Industrialization Go Together

Some recent statistical investigations have shown how intimately connected are industrial development and national prosperity. The studies related the proportion of each of the countries' working population engaged in agriculture and forestry and fisheries to the average per capita income produced by the people of those countries. The countries may be grouped as shown in the table on the next page.

The data for a larger number of individual countries, shown graphically in chart 1, illustrate how striking is the general relation between the extent of industrialization and the average income per capita. Since many of the estimates are very rough, and the conversions into dollars do not reflect exactly internal buying power, incomes can be compared between unlike countries only with a considerable margin of uncertainty. Despite these qualifications, the general correlation between industrialization and income is striking.

Interestingly enough, data for the individual states of the U.S.A. show much the same picture. These data are shown graphically in chart 2. Chronically poverty-stricken areas of the U.S.A., such as the Cotton Belt and the southern Appalachian states, are areas of very low industrial devel-

PER CAPITA INCOME AND PROPORTION IN AGRICULTURE, SELECTED COUNTRIES, AVERAGE 1925-34

Country	Proportion engaged in agriculture ¹	Income per capita
	Per cent	Dollars
<i>Industrialized countries—</i>		
United States	19	525
Canada	35	521
United Kingdom	6	425
Netherlands	21	358
France	25	287
Germany	24	290
<i>Non-industrialized countries—</i>		
Hungary	54	165
Japan	50	159
Poland	62	165
Italy	43	154
U S S R.	74	152
Bulgaria	67	119
India	62	90
China	75	49

Source: Louis H. Bean, "International Industrialization and Per Capita Income," part V of *Studies in Income and Wealth*, (National Bureau of Economic Research, Inc., New York, 1946).

¹ Includes also fishing and forestry.

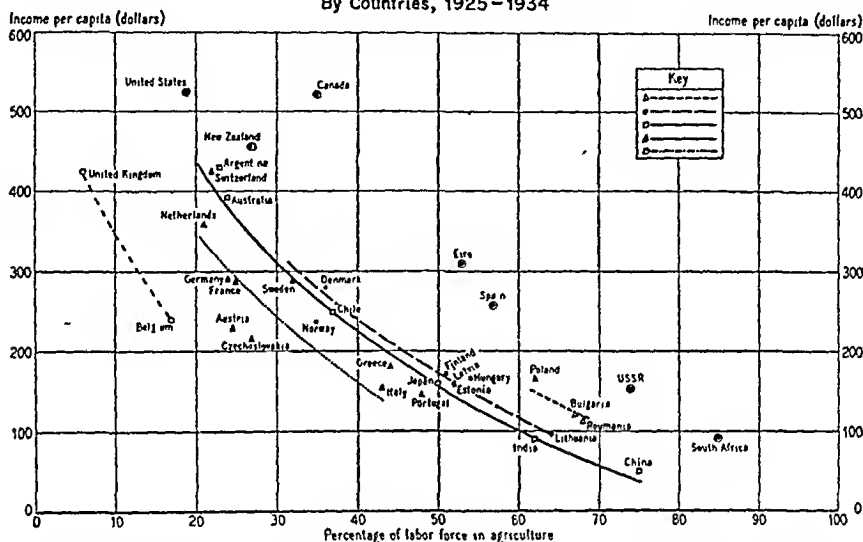
opment, while the highly industrialized states, such as Connecticut, New York, and more recently California, are regions of far higher average income.

The correspondence between industrialization and income is far from perfect, of course, either between countries or between American states. Agricultural countries using advanced methods and with abundant resources per worker, such as Canada or New Zealand, have incomes relatively high for their proportion in industry. Some countries moderately industrialized, such as Italy, but with limited resources and largely hand-types of agriculture, have incomes low in proportion to their degree of industrialization. Similarly, American states with rich agricultural resources per capita like Iowa or Minnesota have much higher incomes than equally industrialized states with poorer agriculture, such as Tennessee or Kentucky. (Note chart 2.) As Mr. Bean has shown, the degree of development of tertiary industries—trade, transportation, service and professions—also affects income, since these industries provide higher incomes on the average, than do manufacturing and mining.

Both as between rural America and industrial America, and rural countries and industrial countries, the basic facts are the same. The hewers of wood and the drawers of water—and the producers of food and fish—are as a rule poorly paid throughout the world. The high-level prosperity of American farmers in 1918-20 and 1941-45 has to date happened only dur-

ing great wars. The wielders of the implements of modern civilization, spindle and loom, I-beam and welder's torch, bricklayer's trowel, locomotive throttle, engineer's T-square and transit, surgeon's scalpel and movie camera, earn more and live far better, as a rule, than do farmers—barring the industrial unemployed in periods of business depression. Farmers too

CHART 1
Percentage of Labor Force in Agriculture and Per Capito Income of Totot Population
By Countries, 1925-1934



Source: Louis H. Bean, "International Industrialization and Per Capita Income," Part V of *Studies in Income and Wealth* (National Bureau of Economic Research, Inc., 1946).

Each symbol represents the income and industrialization for one country. The lines show the apparent relation between these two for various groups of countries. The lowest line (for United Kingdom and Belgium) is for countries with very limited agricultural resources; the solid line, for countries with better agricultural resources. Another line might be drawn in for the countries shown with a circled dot (from the United States to South Africa) with large acreages of rich crop land per capita. Such a line would show that in these countries, income ran much higher for the same degree of industrialization than in countries with poorer natural resources.

can multiply their power by machinery, setting their hands to tractor plows, hay loaders and milking machines, but as we have seen that can work out well only if still more of their brothers and sons shift to non-farm industry.

We Must Complete the Industrial Revolution

The great task of the post-war generation is to complete the industrial revolution—complete it by spreading industrial opportunity throughout the world, putting the means and mechanisms of large-volume modern production, agricultural and industrial, into the hands of peoples in all countries and aiding them to learn to control and use them wisely and effectively.

Three-quarters of the people of the world still live on the bare edges of subsistence, malnourished, poorly clothed, miserably housed. Their limited and narrow existence shows in their short span of life, in their lack of education or knowledge of the world, in their abject poverty. The normal peacetime expectation of life is over sixty years in the industrialized countries of western Europe and America. In Egypt and India and many Central and South American countries, it is thirty-five years or less. Out of 1,000 children born, about 170 die before one year of age in British India, only about 55 in the U.K. and the U.S., and only 32 in New Zealand. Of each 100 male babies, only 54 reach 15 years of age in India, about 70 in Bulgaria, while 94 do in New Zealand. The average income before the war was around \$25 to \$50 a person per year in most South American countries and China, and \$90 in India, as compared to around \$300 a year in most of the highly industrialized regions of northwestern Europe, and over \$400 a year in the U.S., Canada, and the U.K. These bare dollar figures merely provide a rough measure of the *average* distance that still exists between the standards of living in different countries, without considering the even larger variations behind these averages within each country.

Completing the industrial revolution means developing the industry of all countries to the extent suitable in view of their resources and culture, and modernizing and intensifying their agriculture, mining and other exploitative industries. The erection and operation of factories themselves constitutes only one sector of the necessary transformation. Transportation by road, rail, water and air must be provided. So must electricity, sanitary water, sewers, streets, roads, schools, hospitals, communications, and all the other paraphernalia and accessories which make high-level modern industry and life possible. And finally, creation of housing itself is one of the great outlets for human energy, as well as one of the great goals and symbols of human well-being.

Nations Can Industrialize Themselves

The world is fortunate in having had one great living example of the rate at which an under-developed country can both build the implements of modern civilization and learn to use them. During its two decades of peace, the Soviet Union carried through a great national program of deliberate and planned industrialization. During most of the prewar decade, the threat of the Nazi menace caused more and more of the growing industrial strength of the U.S.S.R. to be diverted into military preparations. We know now how fortunate the rest of the United Nations are that Russia began to prepare so soon and so well! Ignoring the losses from this diversion from peace to defense, the rate of growth of Russian industry may serve as a measuring rod against which other nations can compare their plans and their achievements.

In 1929, as before the first World War, Russia was still a country of peasants. Over 80 per cent of the population were engaged in farming, and less than 20 per cent lived in cities. Despite her great per capita wealth of fertile soil and ranges—equalled only by the U.S.A.—the Russian income was only about 100 American dollars per capita. In 1926, only 51 per cent of the population were literate.

By 1939, the Soviet Union had increased its industrial employees to 42 per cent of the workers, or twice the proportion of a decade earlier. The proportion in agriculture had fallen from 80 per cent to 58 per cent, while the proportion of literacy had been increased from 51 to 81 per cent. The reported State investment in new productive capital over this period was 135 billion rubles, equivalent to possibly 35 billion American dollars, about \$220 per capita for the entire population. The national income of the country, meanwhile, had almost quadrupled in approximate dollar terms.²

The bare statistical summary gives little idea of the human suffering and deprivation, of struggle and achievement, that went into this great period of growth. The creation of new industrial communities; the vast construction and developmental projects like the Dnieprostroi dam and hydroelectric works; the reorganization and modernization of Soviet agriculture; roads, railways, and ships; crèches and nursery schools; scientific training and research laboratories and institutions; comprehensive systems of general education, public health and medical clinics; countless other specific activities were involved in remaking and modernizing the whole life of the country. The struggles, aspirations and careers of tens of millions of people went into the great development. For many years the Russian people lived with almost no new textiles, shoes, or other deferrable consumer goods and only the most Spartan of food and clothing, to squeeze out the capital for the basic industrial development. They were just beginning to relax a little, to expand more goods for current consumption, and to improve still low standards of consumption, when preparations to meet the growing Nazi threat plunged them into another era of privation which the actual war greatly intensified.

The industrial might of the Soviet Union, the number and power of her tanks and planes and guns, the inventiveness and skill of her military leaders, and the stubbornness and devotion of her fighters, astounded Hitler and all the world.

Few had believed the Soviet's own reports of their internal progress. The reported fact of an increase in Russian industrial production of 437 per cent from 1928 to 1939 no longer looks fantastic in retrospective view of the way that industrial might, aided by relatively small supplies from

² The income data are from Mr. Bean's paper, the rest from the Bureau of Foreign and Domestic Commerce, U.S. Department of Commerce.

her allies, halted and rolled back the greatest fighting machine the world had ever seen up to that time.

Few other countries may wish to regiment their people for peacetime development as rigorously as Russia regimented hers. Few may attempt to go so far and so fast in all lines of the nation's life at the same time. Given financial and technical help from the more advanced nations, other undeveloped nations can gain the advantages of industrialization without calling on their people for the sacrifices which the Russians made. But the Soviet experience remains one of the massive outstanding facts of the present world. A nation can, if it will, lift itself by its own bootstraps. It can "starve itself rich." Given the will to industrialize, and the needed basic resources, it can make itself over from a backward nation to a modern industrial nation within a single generation.

Other nations or areas have made similar transformations, though at somewhat slower rates. Turkey is one example. The Jewish settlements in Palestine are another, greatly aided of course by the inflow of loans and contributions from other countries. The growth and development of the Tennessee Valley area of the U.S.A. is a third. But none of these cases—except possibly Palestine—have achieved the tempo and intensity of progress of the Soviet experiment.

Industrialization Will Vary Between Countries

Post-war industrial development may follow greatly different forms in different countries.

The upheavals of wartime, and the stimulus to national effort which invasion, struggle for freedom and eventual liberation have given many countries, may produce post-war national efforts in some other countries comparable with the Russian in intensity. Free China is one case. The greatly stimulated energies of modern China and the vision of a more prosperous country may push forward to bold programs of transportation and modernization of agriculture and industry. Poland is another. Even prior to liberation, Polish experts had already developed far-reaching plans for post-war railways, roads, bridges, waterways and flood control, communications, air and sea transport, and mining, manufacture and agriculture.³ Other governments have parallel ideas for the post-war development of their countries. When Spain is finally free from dictatorial rule, it will undoubtedly tackle the development of Spain with as much vigor as it fought the Fascist attack against overwhelming odds. Many South American countries have ideas and plans for post-war development, though generally on a somewhat less ambitious scale. Even in India, long the most somnolent of

³ Dr. Leon Baranski, "Some Economic Problems of Poland," lecture on March 21, 1943. (Polish Information Center, London.) Also unpublished memorandum on "General Scheme for Poland's Economic Development" made available to me by the same author.

all nations in conscious social action, the "Bombay Group" is pushing an ambitious program for the industrialization of their country. The Soviet Union itself, beyond the plans for reconstruction of war damage, is projecting plans for still larger output and further advance in the physical and cultural standards of living of her people.

Although the specific industries will vary, in most undeveloped countries several industries and utilities can be established or expanded at the same time. By moving forward on several projects simultaneously, and selecting products which are mutually inter-related, the risks in each one will be reduced and the prospects for success of the whole undertaking be increased. The workers newly employed in each plant will help make markets for the products of the other new plants as well as for the established industries. The wider the range in which industrialization takes place (within the industries suited to the country), the greater will be the prospects for general success and for profitable repayment of the capital employed. Today in undeveloped countries, governments frequently draw up the general plan of industrial development, and then arrange for the individual projects to be undertaken either under public auspices or at least with the aid of public finances. With careful planning and initiation of many inter-related projects at the same time, the risks involved in each are much less than they were under the older method of an individual business taking sole responsibility for each separate development.⁴

Is World-Wide Industrialization Feasible?

What would it take to industrialize all these backward countries? How much progress might be made within the first post-war decade? How much investment would be required? Could the world produce the capital goods and build the structures required? How much difference might it make to the peoples of the countries concerned? Let us now turn to these quantitative aspects of the problem.

We can approach the questions in several different ways. On a rough over-all estimate, we may say that the undeveloped areas in greatest need of industrialization embrace eastern Europe, the Near and Middle East, China, India, Central and South America, and Mexico. Roughly one and one-half billion people, about three-fourths of the population of the world, live in these areas. Only about 40 per cent of them are now employed in non-agricultural pursuits. If these countries were to increase their non-agricultural workers to 55 per cent within a 10 year period, that would be a creditable achievement, though only about one-half as fast as the change in the Soviet Union from 1928 to 1938. We may assume there is a working population of 400,000,000 people out of the total one and one-half billion

⁴ See "International Development Loans," *Planning Pamphlet*, National Planning Association, No. 15, New York, 1942; and P. N. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," the *Economic Journal*, No. 210-211, Vol. LIII, pp. 202-211, 1943.

population. Making new places in non-farm employment for 15 per cent of these workers would mean creating new work places for 60,000,000 people.⁵

That means shifting to the industrial labor force of these countries about as many workers as are in the total present labor force of the U.S.A.

American experience can throw a little light on how much capital would be required. American manufacturing and transportation concerns have invested in their facilities about \$5,000 capital per employee. Governmental units have correspondingly high investments in roads, schools, ports, streets, water systems and other capital facilities. In peacetime only about one-third of American non-farm employment is in factories and public utilities, however. The capital investment in financial, commercial and construction concerns is far lower than in factories—under \$1,000 per worker. Service, professional, governmental and domestic employees use still less capital per worker.

In any case, the initial stages of industrialization in underdeveloped countries would not attempt to bring them fully up to the highest levels at the first stage. The capital available would be spread out more thinly, in those industries where it was most productive, while production on a primitive or handicraft basis would continue in many others. The relatively primitive methods of the small Chinese production co-operatives still yield a great gain in output per worker above that of a typical Chinese peasant or coolie.

In the Soviet Union, the average investment in capital facilities during the prewar decade was about 13,500 rubles for each worker added to non-farm employment. This includes the investment to improve facilities used by the workers already employed, as well as to provide facilities for new employees. This may be roughly equivalent to about 3,500 American dollars per worker.

Let us take a much more conservative figure—say \$1,000 per head—as the average investment needed per worker shifted from agriculture to other employment in the undeveloped countries. For the 60 million workers to be shifted in the post-war decade, that would give a rough estimate of 60 billion dollars worth of capital required. Not all of this would need to be in dollars or other international currencies, however, for much of the construction labor and purchase of crude materials such as lumber, stone and sand could be provided domestically and paid for out of internal funds.

This crude over-all estimate may be checked against rough estimates which national authorities of the countries concerned have made of their post-war investment requirements. During my attendance at the Bretton Woods Monetary Conference, I inquired among the experts present for

⁵ This calculation ignores the further number of persons available for employment because of the growth of population. Unless workers could be absorbed in industry more rapidly than calculated here, there might be little or no reduction in the actual numbers engaged in agriculture. These figures thus represent the minimum numbers for which non-farm jobs would be needed.

their views on this problem, and succeeded in bringing together a number of such estimates. In some cases, as of those for Poland, they are based upon fairly careful calculations. For China and India, they are very rough calculations of projects that seem feasible and desirable. For South and Central America, they represent preliminary calculations from the Inter-American Development Commission. In other cases, they are very crude rule-of-thumb guesses. With all these qualifications, here are the estimates:

ESTIMATED INVESTMENT NEED, FIRST POST-WAR DECADE (BILLIONS OF U.S. DOLLARS)^a

Region	Total investment	From domestic sources	Foreign investment required
Eastern Europe	18	6	12
China	10	4½	5½
South and Central America	12	6	6
India	10	5½	4½
Total	50	22	28

In addition, large investment funds would be needed for reconstruction and further industrial development in countries already well advanced industrially, such as the Soviet Union, England, France, the smaller western European countries, and in Germany itself. H7

Estimates are not available for the Iberian Peninsula and Italy. No doubt substantial investments would be needed there.

Despite the crudity of these figures, it is apparent that these nation-by-nation estimates—or guesses rather—are of the same order of magnitude as the earlier \$1,000 per person estimate. In fact, the agreement is almost suspiciously close. How does this figure of 50 or 60 billion dollars investment in the undeveloped nations seem as a ten-year goal to start towards world-wide industrialization? How reasonable is it? Can the materials be produced? Can that much of the world's goods be set aside from current production, without intolerable burdens upon consumers?

Can the Job Be Done?

As indicated by the detailed estimates, something over half of the goods would have to come from the industrialized nations—possibly 30 to 35 billion dollars worth over the ten years, or an average of three to three and one-half billion dollars worth a year. Of this, possibly half might come from the U.S., and the remainder be supplied by English, French, and possibly eventually also by German industry.

Compared to their war effort, this much export of capital goods would constitute little or no burden on the industrial nations. Even though industrial and transportation equipment exports to the Soviet Union, France,

^a Estimates for the Near East are not available, but would be small compared to the other figures.

and other advanced countries doubled the total, the amount would still be relatively small, compared to wartime production. In fact, the rate of U.S. shipments of fighting stuff at the 1944 peak could provide the materials to industrialize all the backward nations of all the world in a single year—if its composition could be magically changed from the goods of war to peace, and if the nations were prepared to receive and assimilate such a deluge of productive equipment.

Realistically, of course, these average rates would have to be built up by a growth process over the decade, training engineers, managers, construction and maintenance crews and operatives in each country in step with the creation and development of the new facilities. Transportation and marketing facilities would have to be created and expanded, and workers on them trained in balance with the increasing output of goods to be transported and sold.

The level of industrial equipment exports estimated would, however, be much higher than that sustained in prewar periods. In the U.S., such exports never exceeded one billion dollars' worth a year before the war, and averaged much below that even in the 1920's. If the U.S. exports, to advanced and undeveloped nations alike, averaged 2 to 3 billion dollars a year during the first post-war decade, that would make a significant though by no means decisive contribution toward maintaining full employment in the U.S. It would, however, make a relatively much larger contribution toward providing useful outlets for the products of the U.S. metal-working and other capital goods industries, greatly overexpanded to meet war demands.

The share of the needed investment carried by the undeveloped countries, correspondingly, might total twenty-five to thirty billions, or two and one-half to three billion dollars a year for all the undeveloped areas combined. This would not seem to be an undue burden to be saved for industrialization. It would probably be a less crushing burden than the large proportion of her national income which the Soviet Union spent for capital investment during the prewar decade.

The burden would be a declining one, for the process of industrialization would itself raise the income of the countries concerned. The construction programs themselves and the large new demands for labor and other higher-order skills in construction would provide remunerative employment for many workers not effectively occupied on farms. As the new enterprises were completed and got into production, further new employment opportunities would be opened up. Judging both from the Russian experience and from the differences in incomes in countries having various levels of industrialization, the increase in the workers in non-farm occupations from 40 to 55 per cent might be expected to be accompanied by an increase in real national income per capita in these countries of at least 50

per cent. While this would be far from establishing a millennium, it would involve more improvement in average standards of living in one decade in many of these countries than they have enjoyed in a generation.

Social Progress Must Match Industrial

Factories alone cannot create prosperity. In India, Japan and other places, industrial centers have often produced squalid slums in this century much as they did in 19th century England. For industrialization to really raise standards of living, a large part of the gains must go to the ordinary workers in the form of higher incomes and cheaper goods; not too much can be diverted as profits for the few. Advanced countries have developed social security, child labor and factory laws; labor unions; supervision of hours, wages and working conditions; housing programs; educational, health and supplementary feeding programs; progressive taxation systems; and many related measures. These help broaden the distribution of income and insure that more production of goods means higher living conditions for the masses. As undeveloped countries push industrialization itself, they must also push similar social measures if the full advantages are to be gained, and if industrialization is really to mean greater prosperity for their workers.

New Problems in World-Wide Industrialization

Industrialization of the undeveloped nations will create new problems of its own. For one thing, by making nations progressively more able to meet their own industrial needs, it will in the long run reduce the proportion of foreign trade as compared to domestic trade, though this might occur through expanding domestic trade at a more rapid rate than international trade expands. For another thing, it will involve long-term readjustments in the industries of previously exporting countries, to concentrate more on production for domestic consumption and on exports of products in which the country enjoys some unique advantage, geographic or otherwise. These readjustments would take place at the expense of previous exports of staple industrial products which could as readily be produced elsewhere, once the factories were built and the new skills were learned.⁷

On the agricultural side, industrialization will create outlets for under-employed workers on over-crowded farms, and increased markets for more and better food. In eastern Europe, for example, this might involve shifts as follows:

It would seem-essential to set up some regional authority to establish a power supply for the entire Danube area. The slogan "A Tennessee Valley Authority for the Danube Basin" has been coined, and indeed, the analogy of the T.V.A. is peculiarly apposite.

⁷ For a brilliant yet simple discussion of these readjustments, see Adolph Lowe, "The Trend in World Economics," *American Journal of Economics and Sociology*, Vol. 3, No. 3, pp. 419-433.

What is needed is a regional commission with powers to replan not only the power supply, but also the industries and the layout of agriculture in co-operation with the local governments of the area. We shall see . . . the importance that this might have in the diversification of farming and the overcoming of climatic disadvantages, but its most immediate importance would be in facilitating the establishment of new industries. . . . A natural counterpart to new industries and new occupations is the intensification of farm production whenever natural conditions allow, which would give more work on the land. Much might be done by irrigation to increase the efficiency of grain-growing; . . .

Put briefly, the plan for Eastern Europe is in two parts. One involves raising the productivity of industrial workers and providing a steadily increasing supply of consumption goods which the peasants want. The other involves a reorganization of farming, also greatly raising productivity and providing a bigger surplus of food than hitherto for consumption in the towns (and incidentally by the peasants themselves too). That is the plan. The problem is to create a hinge which shall link the two halves of the plan together. Contact being once assured, there is no reason why mutual exchanges should not continue in an upward spiral of prosperity. . . .⁸

Stimulating and working out these long-range readjustments, and keeping all the many varied phases of agriculture and industry in proper dynamic balance through the successive steps in the process of expansion, will be a long task. It will require all the energy and foresight that citizens and organized groups of all sorts—including governments and international organizations—can bring to bear upon it in the years ahead. But it will be a richly rewarding task. It will be carrying to its logical conclusion, in use for higher levels of human activity and human happiness, all the great productive powers of modern science and modern technology.

⁸ P. Lamartine Yates and D. Warriner, *Food and Farming* (Oxford University Press, 1943). Reprinted with the permission of the Oxford University Press.

WESTERN EUROPE

*MODERNIZATION OF INDUSTRY IN BRITAIN**by* E. M. H. LLOYD

Two wars in one generation have transformed Britain from being the world's largest creditor into the position of a debtor nation. In 1913, British foreign investments were valued at above twenty billion dollars; today her indebtedness abroad exceeds her foreign assets. Instead of resting on a comfortable cushion of about a billion a year from foreign investments, she now has to meet an annual liability of at least half a billion. This means that in order to balance her accounts and still import as much as before the war, she would have to increase her sales of goods and services to foreign countries by as much as 75 per cent above the prewar level.

Britain's foreign debt has been contracted mainly in paying for wartime import surpluses from India, South America, and the Middle East and for military expenditure in the Middle East and India. Owing to Lend-Lease from the U.S.A. and mutual aid from Canada she has not incurred a large war debt in North America. It is the countries that formerly sent foodstuffs and raw materials to Britain as dividends and interest on past investments that are now in the position of creditor countries, entitled to receive from her an excess of imports over exports in the form of industrial goods. This should provide an unrivaled opportunity for raising their standards of living and developing industrialization in what have hitherto been mainly agricultural areas.

What prospects are there that Britain will be able to shoulder this burden without a reduction of her own standard of living? The answer will depend on the extent to which she can modernize her industry, raise her productivity and maintain full employment. This is the challenge that faces the Government and people of Britain.

The Labor Government was elected with a majority that surprised all parties. The mood of the electorate reflected confidence that radical changes held out the best hope of peace and prosperity. Though the election was fought mainly on domestic issues, such as housing, nationalization of mines and the prevention of unemployment, the new Government stands for co-operation in the international field and determination to avoid a repetition of the economic nationalism and restrictionism that impover-

ished the world and played into the hands of war-making gangsters in the decade before the war. The election of Labor to power in Britain strengthens the worldwide movement towards economic democracy, which has as its goal higher standards of health, welfare and education for the common man. During the thirties the common man felt himself the victim of blind forces which he was powerless to control. Unemployment, restrictionism and what was called the "inexorable working of economic laws" have come to be associated in his mind with the evil spirit of Nazism and Fascism which he and his fellows have at last overcome. Both civilians and members of the armed forces feel that they have not endured suffering, hardship and loss during six long years of war only to restore the prewar system of insecurity and want. New men and new methods are called for. Not only the lowest paid workers but wide sections of the middle income groups, whose savings and social status make them a conservative and stabilizing influence, are in a mood for new experiments in public enterprise and Government planning. Though the average age of the Cabinet Ministers of the Labor Government is on the high side, the ideas for which they stand represent the revolt of youth against a generation which failed to prevent the curse of unemployment and the tragedy of war.

Planning the National Resources

If the Labor Government is to carry out its program of promoting maximum employment and stimulating productivity, it must have a clear picture of actual and potential resources and a target to aim at in considering how to make best use of those resources. This presents special difficulty at a time when the war has only recently ended and the abnormal readjustments of reconversion and demobilization must be faced. Any figures that can be given are, therefore, tentative and provisional and need continuous revision in the light of experience. Decisions of policy as to priority of need which have to be taken in the near future (for example, as to the number of houses to be built) will be partly based on estimation of future national income and resources but may in themselves modify its composition and amount.

In an analysis of post-war prospects issued by P.E.P.¹ entitled "Framework of a Four Year Plan," estimates were given for the national income in 1946 to 1949 and for a manpower budget showing how the occupied population might be employed. The outstanding feature of this forecast is that during this period Britain's main problem will be not the prevention of unemployment but a shortage of labor in relation to her urgent requirements for making good the losses of the war and raising her standard of living. Whereas 1944 was a record year for private consumption expendi-

¹ P.E.P. Bulletin No. 235, 1945. "P.E.P." is Political & Economic Planning, a private society in England corresponding to the National Planning Association in the U.S.A. (Editor's note)

ture in the United States, private consumption in real terms in Britain was about 25 per cent below the 1939 level. To offset the falling off in Government war expenditure and maintain full employment, both countries need to increase private outlay by about 50 per cent above the 1944 level. But compared with 1939, the required increase in the volume of private spending in the U.S.A. is near 75 per cent, and for Britain only about 20 per cent. For the next four years Britain's first aim will be to get back to where she was before the war and only then begin to raise her prewar standards of living. In the United States the main problem is to find means of using increased resources developed for war purposes for meeting a vastly different and diversified potential demand which can only come into existence and become effective on the assumption that the productive resources are fully employed. American forecasts are preoccupied with the danger of a surplus of manpower; British planners face a prospective shortage of labor to achieve all the competing purposes for which it is required.

In 1944 the Gross National Product in the United Kingdom was £10,069 million or about 40 billion dollars, compared with 196 billion dollars in the United States. While American planners appear to have difficulty in finding enough jobs to maintain this figure after reconversion, British planners must seek primarily to find means to raise the national output to a higher level and have difficulty in finding enough manpower for the jobs to be filled. Hence the greater attention which has to be paid in Britain to increasing the productivity per man hour of the labor employed. America can enjoy increasing leisure in the form of a shorter working week to an extent that Britain with its smaller resources and lower productivity per head cannot yet afford. For this reason this chapter concentrates more on the modernization of British industry and on ways of increasing the nation's wealth than on measures necessary to maintain full employment. Full employment is not enough as a goal by itself. Indeed, if full employment should be accompanied by no increase, or even a decline in productivity per head, it might result in a lower total national output than would result from higher productivity accompanied by moderate unemployment. But obviously the two aims are complementary. To secure maximum production, there must be both maximum employment and maximum productivity per worker.

After demobilization is completed the manpower which will probably be available in the United Kingdom will be only about 5 per cent more than that which was engaged in civilian employment during the war, whereas in the U.S., it will be 10 per cent larger. The estimated figures are: U.S., an increase from 52.5 millions in 1944 to 58 millions by 1948; but in the United Kingdom, only from 16.9 millions to 17.8 millions.

From these figures of potential civilian working force, parallel estimates can be calculated for what the potential national income would be if these

workers were kept fully employed in each country. These estimates must allow for the shift of individuals from military service at low incomes to civilian work at better incomes; from munitions plants at high war wages to peacetime occupations at lower wages; the reduction in the work week; and finally a gradual rise in output per worker. Taking all these into account, and assuming no change in the general price level, it appears that the change from all-out war to all-out peace would mean a reduction of Gross National Product in the U.S. from 196 billion in 1944 to 188 billion for 1948. For the United Kingdom, the figures are 40 billion in 1944 but only 36 billion for 1948. Maximum peacetime production for the U.K. is thus about 10 per cent below its wartime peak.

The U.K. figure of \$36 billion Gross National Product, after allowing for indirect taxes less subsidies and sums set aside for depreciation and maintenance, may be compared with P.E.P.'s estimate of \$33 billion for net national expenditure, and \$30 billion estimated by N. Kaldor for net national income at factor cost.*

The next problem is how the total national expenditure might be distributed between different purposes, i.e., between investment and consumption, between investment at home and repayment of foreign debts and between housing, factory building and installation of new plant and machinery. It would be theoretically possible to maintain consumption at wartime restricted level (20 per cent below 1938) and devote the whole of the resources released from war purposes to public and private investment. But this extreme is neither practically nor politically possible. It can be assumed that it will be necessary to aim at increasing private consumption at least to its 1938 level. But in that event the amount devoted to new investment would have to be so much lower. Alternative plans put forward by N. Kaldor follow:

ALTERNATIVE PLANS FOR THE USE OF THE U.K. PRODUCTION
(£ millions at 1938 prices plus 33½%)

Type of use	Plan I	II	III	Ib	IIb	IIIb
Private consumption outlay	5,550	5,315	4,982	5,750	5,515	5,182
Public consumption outlay	1,135	1,135	1,135	1,135	1,135	1,135
Foreign balance of payments	—	—	—	-200	-200	-200
Net investment (public & private)	765	1,000	1,333	765	1,000	1,333
	7,450	7,450	7,450	7,450	7,450	7,450
Sinking fund	—	331	800	-282	49	518
Percentage increase in taxes compared with Plan I.	—	20	49	-17	3	31
Percentage increase in real private consumption compared with 1938	19	14	7	23	18	11

* Sir William Beveridge, *Appendix C of Full Employment in a Free Society*, 1945.

Of these six plans, Plans I and Ib may be criticized on the ground that the provision for net investment is definitely too low. Plan II allows for a rate of expenditure on buildings that would probably provide 500,000 houses in the year (this is the annual rate necessary to meet the full number required over a period of 15 years); and it also allows for nearly doubling the prewar volume of investment in new plants and machinery. Plan III, with its very heavy rate of annual investment, represents an economically desirable target to be aimed at rather than a goal which could be easily reached.

Similar estimates for each of the four years 1946 to 1949 have been made by P.E.P. These are based on a level of prices 50 per cent instead of $33\frac{1}{3}$ per cent higher than 1938. For the year 1948 the two estimates would compare as follows:

NET NATIONAL EXPENDITURE FOR 1948
(£ millions at 1938 prices plus 50 per cent)

	P.E.P.	Kaldor Plan III
Private consumption outlay	5,450	5,605
Public " "	1,500	1,277
Net investment (public & private)	1,485	1,500
Foreign balance of payments	-150	—
	<hr/> 8,285	<hr/> 8,382

These two independent estimates point to the conclusion that, provided consumption is kept to not more than 5 to 7 per cent above its 1938 level (equivalent to about 25 per cent above 1944), net investment in 1948 could reach a level nearly three times that of 1938. Even this would be none too large if private consumption outlay after 1950 is to rise to a level approaching that now prevailing in the United States. But a temporary reduction in the standard of living below what it might otherwise have been will be one of the inevitable results of the war. For some years war-damaged countries must continue to save and restrict their consumption below the optimum in order to devote as much as possible of their resources to houses, public utilities, plant and machinery, which will enable them to raise their standard of living in the future. This is important in Britain for the additional reason that much of her undamaged equipment is obsolete and many of her traditional techniques are old-fashioned and out of date.

Investment and Re-equipment Needs

It remains to compare this target figure of £1,500 million which might be made available for net investment after the war with the estimated needs for new capital equipment.

First, there is the loss of capital due to the war to be made good. This includes overtaking arrears of maintenance and making good the depreciation of fixed plant. Machinery in the civilian sector has not been replaced

or kept in repair; spare parts have been difficult to obtain because the makers have been busy producing munitions. Manufacturers' and traders' stocks of raw materials and finished goods have run down. The White Paper on the British War Effort (Cmd. 6564) says that "the reduced rate of consumption has only been made possible by the existence of stocks which after five years are becoming exhausted." This applies particularly to things like furniture, clothing and household requisites. The aggregate disinvestment to be made good under this head is estimated by P.E.P. at £2300 million, from which may be deducted a rough figure of about £500 million for plant and materials acquired by the State which might be suitable for peacetime purposes. A net figure of £1,800 million is thus taken as the sum needed to make good depreciation of fixed assets and depletion of stocks, to which must be added £1,200 million for actual war damage—making a total of £3,000 million. This figure for loss of domestic capital equipment due to the war may be compared with a prewar estimate of £15,000 million for total capital equipment—equivalent to about £22,500 million at present values. Spread over the five years 1946 to 1950, £600 million a year is thus needed under this heading merely to make good the ground lost during the war.

The second heading to be considered is the need for new capital equipment to provide for expansion and modernization of British industry. A rough idea of the amount required for some of the major industries can be obtained by referring to recently published figures. The Iron and Steel Federation has stated that plans are on foot for spending £120 million in the near future on new capital equipment. For the coal industry estimates ranging between £150 and £300 million have been made. The Cotton Board has indicated that about £70 million at current prices will be spent after the war on new plant and machinery. The Central Electricity Board has plans for spending £90 million during the next four years; and further sums for hydroelectric stations in Scotland and elsewhere have been mentioned, amounting to about £70 million. Shipping, railways and roads will need large sums which may reach £500 million or more during the next five years; large figures have also been mentioned for the re-equipment of agriculture. In addition to these major industries, it is necessary to make substantial provision for the expansion and modernization of small businesses and the development of new industries particularly in the Development Areas, corresponding to the "distressed" areas of the thirties, in Scotland, Wales and the North of England. If a figure of £300 million spread over five years can be provided for this purpose, it will be none too large. A rough total would then be reached as shown on page 39.

Spread over five years the amount of capital required under the first two headings, which may be called rehabilitation and expansion, would thus average £600 million and £420 million, or £1,020 million in all.

ESTIMATED CAPITAL REQUIREMENTS FOR FIVE YEARS

	£ million
Iron and steel	200
Coal	300
Electricity	200
Cotton	100
Transport and shipping	500
Agriculture	500
Other industries	300
	<hr/>
	£2100

This would leave £480 million a year for housing and for investment abroad but only on the assumption made above that as much as £1500 million could be provided in each of the five years. Actually this figure was to be reached only in 1948. During the early years a continuance of high military expenditure would make it impossible to provide so large a sum. Moreover, the manpower needed would not be available. It becomes necessary, therefore, to draw up a progressive plan which falls short of the optimum during the early years. This may be roughly indicated below:

NET NATIONAL EXPENDITURE
(£ million)

	1946	1947	1948	1949	1950
Private consumption outlay	4,800	5,200	5,400	5,600	5,800
Public " "					
Including armed forces	2,500	2,000	1,500	1,400	1,300
Investment (public and private)	1,000	1,200	1,500	1,500	1,500
Foreign balance	-200	-100	—	100	200
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Net National Expenditure	8,100	8,300	8,400	8,600	8,800

During the early post-war years it will be impossible to invest in housing faster than manpower becomes available. In 1944 employment in building and civil engineering was reduced to 620,000 compared with 1,310,000 in 1939. By March 1946, the number had increased to just over a million and it is hoped to increase it to more than the pre-war figure in 1947. While labor for building is being released from the Armed Forces and is being recruited under training schemes, a large proportion of the workers formerly engaged on munitions is being transferred to the manufacture of machinery for capital equipment and of durable goods for consumption. By the middle of 1946 this transfer of labor had made considerable progress but the total employed population was still more than a million below the level of June 1939. Post-war employment is not likely to reach its peak before the spring of 1947. Meanwhile the increase of employment since June 1945 has been directed mainly to production for export, and the number employed for the home market remains below the pre-war level. This has resulted in a continued shortage of consumer goods which is

probably one of the principal factors contributing to a disappointingly low output per head in many industries.

The Future of Agriculture

The wartime expansion of agriculture has been a remarkable achievement. According to recently published figures for England and Wales, while the labor force increased by only 16 per cent between 1939 and 1945, arable acreage rose by more than 60 per cent, potato acreage by 107 per cent and acreage under grain by 72 per cent. Wheat acreage reached a peak of 3.20 million acres in 1943 compared with 1.68 million in 1939; but in 1945 the figure was under 2.2 million, only 30 per cent higher than in 1939. The acreage under barley expanded from under a million in 1939 to nearly 2 million in 1945 and the acreage under oats increased 70 per cent. This expansion of feed crops has gone some way to offset the almost complete cessation of fodder grain imports and has enabled the dairy herd to be maintained and even slightly expanded. Cows in milk rose 3 per cent and total cattle 8 per cent. But the shortage of feeding grains and the plowing up of pastures has resulted in a decrease of 35 per cent in sheep, 50 per cent in pigs and 30 per cent in poultry.

Of the labor employed in 1945, 54,000 were prisoners of war and 40,000 were members of the Women's Land Army; excluding this wartime accession of strength the number of whole-time employees is 2 per cent less than in 1939. The question thus arises as to what scale of output will be aimed at during the next five years and what manpower will be needed or can be spared.

There are those who urge that Britain should aim at obtaining as much of its food as possible at whatever cost from home production, and believe that shortage of foreign exchange will in any case make this inevitable. At the other extreme there are those who urge that British agriculture should be left to adjust itself, without subsidies, tariff protection or quota restrictions on imports, in competition with imported food. They argue that if other countries are willing to sell food cheaper than it can be produced in Britain and to accept British exports in exchange—this proviso is the crux of the matter—it would inevitably lower the standard of living if Britain were to pursue a policy of self-sufficiency and cut herself off from the benefits of international division of labor. The course to be pursued by Labor seems likely to be a middle one, lying somewhere between these two extremes of complete autarchy and undiluted *laissez faire*.

So long as the present world food shortage continues the prosperity of British agriculture will no longer be threatened by a flood of cheap imports. In particular there will remain for some years a large and unsatisfied demand for livestock products which can be economically produced at home. The tendency during recent years has been to grow more barley and oats

for feed and to reduce the acreage under wheat below the highest level reached under threat of blockade. Competent authorities regard a peacetime level of about 1.75 to 2 million acres under wheat as a desirable and economical component in the mixed arable farming which is found suitable for many parts of England. When cheap and plentiful feeding grains again become available, there is likely to be some reduction in the acreage under grain crops but not necessarily in the total arable area. The plowing up of old pastures has led to an expansion of the area under root crops and temporary leys. Temporary grass of high yielding strains in 1945 accounted for nearly $3\frac{1}{2}$ million acres, an increase of 75 per cent on 1939. This represents an important step forward in the intensification of livestock production and dairying. A further reduction of the area under permanent grass which fell from 15.7 million acres in 1939 to just under 10 million in 1945, and even a renewed attack on "rough grazings," amounting to $5\frac{1}{2}$ million acres, by plowing up and resowing with improved varieties of herbage, would be in line with modern tendencies. Farming efficiency in Britain depends not on attracting more labor from the towns, nor even on obtaining the maximum possible output per acre, but rather on greatly increasing the output per person employed, which can only come from making the best use of mechanization and improvements in scientific techniques. To achieve this result may well involve application of large amounts of fresh capital, including the modernization of farm buildings and the lay-out of farms.

The Government will continue to promote efficiency by intensifying research activities and by disseminating the results of research through its advisory service and by means of lectures, pamphlets, educational films and demonstrations on model farms. In addition the wartime system of guaranteed prices and bulk purchase, under which the State assumes in large measure the risk of the market and insulates the producer from world fluctuations, is likely to continue, for the time at any rate, as an integral part of national policy. In the case of wheat, national planning will be co-ordinated with international planning in accordance with principles laid down in the International Wheat Agreement, which aims at harmonizing the interests of producers and consumers through the elimination of gross maladjustments in supply and demand and the regulation of production, exports and reserve stocks in such a way as to maintain relative stability of prices.

In general the problem facing British agriculture will be to reconcile the principle of security of livelihood for the producer with due regard for competitive efficiency and long-term changes in supply and demand. Britain like other countries will benefit most from buoyant demand and a rising standard of living throughout the world, and the prosperity of her agriculture is thus closely dependent on the rate at which industrialization and

technical progress takes place not only at home but abroad. If full employment can be achieved in industry, the nightmare of agricultural over-production and glutted markets, which compelled Britain before the war to follow the example of other countries in pursuing a policy of protection and restrictionism, will give place to a more rational concern with the long-term problem of how to meet human needs for optimum nutrition with the minimum expenditure of human labor.

Foreign Trade and Industrialization Abroad

This brings us to the all-important question of world trade. Britain's Five Year Plan for maximizing production and maintaining full employment can only succeed if she can solve her foreign trade problem. A world-wide depression resulting in contraction of world markets and falling off in foreign demand, would not only paralyze Britain's efforts to balance her foreign accounts but would threaten widespread unemployment and contraction of demand at home. Attempts would then have to be made to insulate the British economy from the worst effects of a world depression by a policy of public works and deficit financing combined with restriction of imports. But the effect of such a policy, particularly in view of Britain's post-war role as a debtor country, would probably be to intensify the depression elsewhere; to the extent that Britain was able to solve her unemployment problem, either by import restrictions or by exchange depreciation (resulting from the maintenance of stable prices and wages at home in the face of falling prices abroad), the incidence of unemployment and falling demand would be shifted to other countries. How then can the onset of a world depression be avoided, or checked in time, once the symptoms become evident?

If a slump develops in the United States it will undoubtedly spread to the rest of the world and only a revival in the American market will revivify world trade. But there is also the possibility that a slump may be started in the outside world and spread to the United States. The danger is that the shortage of goods all over the world and the plethora of money in the form of local currency and bank deposits will stimulate a speculative boom in world markets encouraged by a plentiful supply of dollar loans and commercial credits. Such a boom would be inherently short-lived and precarious; and the ensuing reaction, precipitated by a large inflow of imported goods, might have a long-term effect of damping down enterprise and investment of capital well below the level which each country's resources would justify.

The problem of avoiding a boom followed by a slump in the outside world is closely linked with the difficulty of restoring a more healthy equilibrium between the price levels of different countries which have widely diverged during the war without any compensating adjustments in foreign

exchange rates. In the U.S.A., U.K., and Canada prices have been controlled and the increase in money generated by war expenditure has been neutralized by taxation, loans, price-control and rationing. But in most other countries the shortage of imports and the expansion of local currency and deposits have caused a severe price inflation accompanied by a large accumulation of savings in the form of dollars and sterling balances. These wartime savings, which originate from the limitations on consumption imposed by Allied purchases and restriction of imports, ought to be used by these countries for improving their capital equipment and speeding up the tempo of industrialization. The danger is that too much will be spent on luxury goods for war profiteers and not enough on plant and equipment designed to increase the national wealth, raise the standard of living of the masses and so create a lasting and growing demand for imported goods in future years.

The situation deserves careful study from various angles. In the Middle East some attention was given to these post-war problems by the Middle East Supply Center. What is needed is the drawing up of Five Year Plans for each country so as to arrive at coherent policies which will harmonize the competing claims of consumption and investment, and establish the best compromise to follow between deflation and devaluation, which means determining how best to combine the two objectives of adjusting prices and wages to world levels, and at the same time avoiding unemployment and depression. The subject falls outside the scope of this chapter but its close connection with Britain's role in promoting industrialization in backward countries and maintaining full employment and maximum production at home is evident.

The chief conclusion to be drawn at this stage is the desirability of some form of combined planning between these countries on the one hand and the United States and Britain on the other, which will ensure that the best use is made of their wartime accumulations of dollars and sterling and that their progress towards a higher standard of living through the development of public utilities, industrialization and agricultural technique is not hampered by currency instability and violent fluctuations in the rate of overseas investment. What is needed in the interest of all concerned is that industrialization and investment, and consequently the demand for imports, should so far as possible proceed at a steady and regular rate. In this field both the United States Export-Import Bank and the International Bank for Reconstruction and Development will have an essential role to perform.

It is sometimes held that it must obviously be against the interest of older industrial countries like Britain for new industries to be established in the more undeveloped countries of the world. If textiles and iron and steel goods are manufactured in India, boots and shoes in South Africa and

woolen goods in Australia and New Zealand, must not this reduce the demand for British exports, especially if the new industries are protected—as in the cases mentioned—by a protective tariff? There is of course some element of truth in this. The activities of particular firms and particular types of trade may suffer; but equally other firms, such as those engaged in the export of textile machinery, may benefit. Moreover the argument tacitly assumes that there can only be a limited demand for such things as clothing and iron and steel—which may be true enough in the short run but is profoundly untrue if one takes a period of years in which there is an over-all increase of world production and consumption. Britain's best customers in the past have been the industrialized countries of Europe where the demand per head for manufactured goods of all kinds has greatly exceeded that in primary producing countries. Where industrialization has not taken root, the standard of living and hence the demand for manufactured goods is at a low ebb.

The prosperity of Lancashire's cotton industry depends on the state of trade and the level of wages paid in dozens of backward areas throughout the world. Peasants struggling on the margin of subsistence have little or no surplus to enable them to buy a decent amount of even the cheapest clothing. Increased demand per head of the world's population can be brought about only by increased output per head, which involves not only improved agricultural techniques but above all a greater degree of industrialization and mechanical equipment. The old-fashioned conception of dividing the world into industrialized countries exporting manufactured goods and agricultural countries condemned to remain "hewers of wood and drawers of water" finds no place in current discussions of Britain's place in world trade. On the contrary it is British policy to encourage to the maximum extent efficient and wisely planned industrial development in India, China, southeast Europe, the Middle East and other undeveloped areas, without which there can be no sustained and growing demand for British exports. On the other hand the tendency to continue protection of infant industries after they are able to stand on their own feet and thus to remove the spur of foreign competition, may cause injury not only to exporting countries but also to the countries themselves that adopt this policy.

There is at present no risk of sound industrial development going ahead too fast. On the contrary the limiting factors are likely to be: reluctance on the part of investors and entrepreneurs in undeveloped areas to take the risk of new ventures; and lack of the trained technical and managerial skills that are needed for starting new industries. It is to Britain's interest to contribute to the best of her ability in raising the level of technical efficiency and enterprise in undeveloped parts of the world and to welcome the activities of specialists from the United States and other countries who are engaged in the same task. There is room for all in the colossal task of

expanding world trade and production, and it would be a short-sighted and dangerous illusion to treat competition between individual firms of different nations as a necessary ground for national rivalry and friction between their Governments. In the United States itself there are backward states existing alongside highly industrialized states. Industrial development is continually spreading from the latter to the former; and though some private businesses may be rendered obsolete in the process or be forced to take up new lines, no one would argue that it would benefit the United States as a whole—or even the industrialized states themselves—to obstruct this beneficial tendency. So it should be in the United Nations. If world prosperity and the prosperity of each constituent nation is to be our goal, Governments should so far as possible conduct themselves in their commercial relations with one another as if they were State Governments united under a Federal Government. Anything that conflicts with this standard of behavior is a handicap to world prosperity and is rightly condemned at the bar of world public opinion.

The Manpower Budget

A Five Year Plan for modernization of industry in Britain will depend primarily on the size of the labor force which can be made available and its distribution between different industries. The need for a National Manpower Budget has been officially recognized in an important White Paper on Employment Policy and in a speech by Mr. Bevin as Minister of Labor and National Service in the Coalition Government. The disquieting feature that emerges is the shortage of labor in relation to urgent requirements. Britain's capacity to increase consumption and to invest in new labor-saving machinery is limited by her capacity to produce. Once full employment is accepted as the goal, the bottleneck in production will be manpower.

Before the war the total labor employed in the services and in industrial employment was 18½ million out of a total of 32 million persons between the ages of 14 to 64 for men and 14 to 59 for women. By the middle of 1944 the number employed had increased by 3½ million to 22 million through a reduction of unemployment by 1¼ million and an addition of 2¼ million persons—mainly women—not previously employed in industry. (In the above calculation two women working half-time are counted as one whole-time worker. The total additional labor mobilized for whole and part-time work was 4½ million.) Of the total of 22 million in June 1944, 10.3 million or 47 per cent were in the armed forces or munitions industries; 5.7 million or 26 per cent were employed in agriculture, mining, public utilities, shipping and other industries, which had to be maintained or expanded; and 6 million or 27 per cent were employed in the building, textile, clothing or other manufacturing industries and in the distributive trades. Out of 7.6 million engaged in manufacturing industries 76 per cent

were on war work, 20 per cent on civilian work for the home market and only 4 per cent or 300,000 were producing for export. In 1938 about 15 per cent of the 7 million persons employed in manufacture, or 850,000, were producing for the export market. If exports are to be increased by more than 50 per cent after the war, this figure will have to rise to $1\frac{1}{4}$ million or four times the number working for export in 1944.

In considering the changes needed to achieve the objects of post-war planning the main priorities will be housing, exports, and industrial equipment. Consumer goods for the home market, services, and the distributive trades will only increase at a slower rate. It is assumed that in agriculture, and in mining the post-war numbers employed will be virtually the same as in 1939. Similarly in Government services, public utilities, transport and shipping, there is no ground for anticipating major changes. These two groups account for about 5 million between them. The requirements of the building industry are going to be the most difficult to meet. If it were decided that rehousing the population should be pushed ahead at full speed without regard to economic repercussions, with the same unqualified priority that munitions production received during the war, a target of two or even three million, compared with slightly over one million before the war, would have to be considered.

In distribution, including entertainment, commerce and finance, the number employed before the war was $4\frac{3}{4}$ million—nearly two and a half times as many as the number employed in agriculture and mining. By the middle of 1944 this figure had been reduced by 30 per cent to $3\frac{1}{3}$ million. In the distributive trades a reduction of one-third in employment has been accompanied by a fall of only one-fifth in retail sales. Output per person has thus risen by about 15 per cent, though the quality of both goods and service has sensibly deteriorated. Under conditions of full employment and good wages, the demand for a higher standard of service in the distributive trades, for better provision for recreation and restaurant service, and for a return to peacetime standards of entertainment will be difficult to resist. Some increase over the wartime level under this head must be provided for; but in view of the conflicting claims of other purposes the most that can be prudently planned will perhaps be to aim at a return to the prewar level at the end of four or five years.

This brings us to the group of manufacturing industries in which the process of reconversion is bound to present special problems. Before the war this group accounted for 6.96 million persons of which 3.1 million were in the metal engineering and chemical industries, $1\frac{3}{4}$ million in textiles, shoes and clothing, and 2.1 million in other manufacturers, including food, drink and tobacco manufacturing, which employed 650,000. By the middle of 1944 the first, or munitions, group had increased to 5 million and the other groups had fallen by one-third from 3.85 to 2.6 million, making a

total of 7.6 million. How will the labor employed in these industries be redistributed after the war?

In accordance with the priorities already suggested, provision may have to be made for the employment of at least 1.25 million on manufacture for export, compared with 850,000 before the war. But before exports can be expanded to this extent, considerable extensions to plant and capital re-equipment will be needed. Both heavy and light industries will be engaged in meeting the export demand. But the heavy industries will in addition have to manufacture machinery to enable the light industries and the public utilities to expand and modernize their equipment; they will then have a potential demand for labor considerably greater than in 1939, particularly if provision has to be made for continued production of armaments on a moderate scale. The needs of the metal, engineering and chemical industries (including shipbuilding and aircraft production) may therefore be expected to be lower than the wartime figure of 5 million but higher than the 1939 figure of 3.1 million.

Assuming that there is no major change in food, drink and tobacco manufacturing, it seems essential to provide for at least a restoration of prewar numbers in the textile and clothing industries and if possible for a substantial increase in other manufactures, many of which are subsidiary to the building industry and others represent the newer industries catering for durable consumer goods.

If as the Plan develops it is found that the needs of industry for labor are considerably greater than before the war—and this is a natural corollary of any full employment policy which presupposes more jobs than men—the best hope of meeting the demand is to be looked for in the possibility of cutting down munitions production through the adoption of world-wide reduction of armaments and armed forces. In that event peacetime distribution of output in the manufacturing industries might compare with the 1944 picture as follows:

	1944 %	Workers in millions	1949 %	Workers in millions
Munitions production	76	5.8	10	.7
Production for home consumption needs	20	1.5	40	2.9
Production of peacetime capital equipment	—	—	33	2.4
Production for export	4	.3	17	1.25
	<hr/> 100	<hr/> 7.6	<hr/> 100	<hr/> 7.25

The figures for the complete Manpower Budget for 1949 may now be summarized and compared with 1939 and 1944, as shown on page 48.

Productivity per Man Hour

This hypothetical distribution of manpower and national output brings us to the next point—the all-important question of productivity per man

	Workers in millions 1939	Workers in millions 1944	Workers in millions 1949
Agriculture and mining	1.98	1.95	1.85
Government, utilities & transport	2.90	3.25	2.90
Building & civil engineering	1.31	.62	1.50
Metal, engineering & chemicals	3.10	5.06	3.50
Other manufactures	3.86	2.55	3.75
Distribution & services	4.77	3.34	3.90
	<u>17.92</u>	<u>16.77</u>	<u>17.40</u>

hour. If the best use is to be made of the limited resources available, increased output per man becomes the primary condition of economic progress. It is here that opinion in Britain is undergoing a noteworthy change of outlook. During the inter-war period workers and employers were dominated by the fear that unemployment and loss of profits would ensue if output were increased beyond what the market would absorb. Given the deflationary and restrictionist policies adopted by Governments and business, this fear was not ill-founded. The belief in a limited market for each industry's products was more readily accepted than the opposite view taught by economists that, if every industry expands, each provides a growing market for the products of the others. The war for the time being dethroned the economics of glut and restored the more normal conditions of economic scarcity. Attention has turned once again to the age-old problem of how to overcome the niggardliness of nature by making human labor more productive.

Three important investigations into the coal, cotton and pottery industries illustrate the amount of leeway to be made up. The Reid Committee, appointed by the Minister of Fuel and Power, in September, 1944, to report on the present technique of coal production and advise on changes required, was composed of seven mining engineers. They give the following striking comparisons of coal output per manshift in 1938 in different countries:

	Output in tons per manshift in 1938	Increase per cent over 1913
<i>United Kingdom</i>	<i>7.48</i>	<i>13</i>
Czechoslovakia	1.424	49
Germany: Ruhr	1.523	64
Silesia	1.830	62
Saar	1.121	42
Netherlands	1.619	101
Poland	1.787	59
United States (bituminous)	4.37	36

The Committee points out that natural conditions in Britain are less favorable than in the United States but are comparable with those in the

Ruhr and Holland. Inefficient transport is one of the worst features responsible for low output. In the United States one man is employed on haulage for every 50 tons per shift output; in Holland one for every 20 to 25; and in Britain one for every 5. "In Britain the undulating and often circuitous roadways . . . require drastic and difficult reconstruction for the attainment of full efficiency." For this reason, apart from others, the present structure of the industry is condemned and regrouping and reconstruction of existing mines and the sinking of new pits is called for. Development of mechanization and labor-saving devices with special training for machine work is advocated. The report recommends double shift working with a working week of five 8-hour days, improved ventilation and lighting, and greater use of electricity. No estimate is given of the total cost of reconstructing the mines, but an Appendix shows estimates varying from 85 cents to \$4.33 per ton of annual output for remodeling 13 collieries. The total capital investment required has been unofficially estimated at figures ranging from \$400 to \$1200 million. The main conclusion reached is that "the grouping of a number of mines under the same ownership on the Continent, has facilitated the closing down, or merging, of uneconomic mines, and the concentration of production in the remaining shafts. In Britain ownership is widely dispersed and this avenue to greater efficiency has never been explored on any adequate scale."

The *Economist*, commenting on the Report on April 7, 1945, said "If it can be proved that some form of public ownership is technically necessary for efficient production, then the opposition to it, in this pragmatic land, will melt away. And the proof is now very nearly complete. It might conceivably be possible, though only with great difficulty, to bring about the necessary amalgamations by private negotiation, but the provision of the additional capital is a task for the State alone." The new Labor Government is carrying out its mandate from the electorate to proceed with the reorganization of the mines under public ownership.

Of special significance is the emphasis now placed by the miners' representatives on the need for greater efficiency. In the past the miners' trade unions have been more concerned with the wages and conditions of work than with efficiency of production. At the 1944 Trades Union Congress, the Vice-President of the Miners, Mr. James Bowman, emphasized the low degree of mechanization and the obsolete structure of the coal industry, and called for thorough technical reorganization under public ownership. Thirty years ago nationalization of the mines was advocated, largely if not mainly, as a means of achieving social justice for the miners and improving their working conditions. In spite of the recent disappointing level of coal output, many observers still believe that public ownership will not only increase the miner's will to work but will also provide the best means of improving their capacity to produce. The role of the mining engineer

and the skilled manager will be enhanced, if technical efficiency becomes the test by which they are judged.

Another example of outspoken criticism of obsolete methods is afforded by the Report of the Cotton Textile Mission headed by the Cotton Controller, Sir Frank Platt, on the results of their visit to the United States. They "had no hesitation in saying that the United States industry is very far ahead of the Lancashire industry in production per man hour." The Mission reported that with normal staffing the British output per man hour is less than the American by about 18 to 49 per cent in spinning, by 80 to 85 per cent in winding, by 79 to 89 per cent in beaming, and by 56 to 67 per cent in weaving. The main reasons for the difference were the use of high-speed automatic machinery, more up-to-date plants, a larger number of machine units operated by one worker, and lower age of workers. The cotton industry in the United States is organized for bulk production which makes expensive high-speed machinery and multiple shift-working economical. Management is young and energetic and the workers are alive to the advantages of technical efficiency and are not obsessed with longstanding practices and conventions. The remedies proposed to enable output per man hour in Britain to catch up with that in the United States include standardization and specialization to allow for "uninterrupted bulk production methods," re-equipment of mills with new machinery, improvement of working conditions, improved training methods for managerial staff, economy in the use of labor, multiple or double shift working and closer co-operation between spinners and manufacturers in raising the level of efficiency in both sections of the industry.

At a conference of the United Textile Factory Workers Association in May, 1945, the Report of the Platt Mission, which included two representatives of Cotton Trade Unions, was already beginning to bear fruit. Opinion in the Association has been traditionally opposed to shift working but the view now being pressed by Union leaders is that the shift system is an essential condition of modernization and re-equipment of the mills with high-speed automatic machinery, which alone would justify the introduction of a forty hour week for the operatives. The wartime Cotton Board, which is sponsoring extensive experiments in new technique at its own experimental factory, has announced that it is intended to spend \$250 million during the next five years on new plant and machinery for the cotton textile industry.

The cotton "working party," consisting of employers, trade unionists, and independent members, which was appointed by the Government to investigate the post-war problems of the cotton textile industry, submitted its report in April 1946. This report emphasized the need for more up-to-date machinery and greater output per person employed. Shift-working and gradual elimination of redundant equipment were advocated to meet the

present and prospective labor shortage. It was estimated that, under the most favorable conditions, the number of workers available for the industry was not likely to be more than two-thirds of the number required to man the existing machinery, using pre-war methods. Re-equipment was therefore recommended, to be financed by a compulsory levy and loans at low interest rates. This would aim at gradually building up a modernized industry, equipped with a smaller number of spindles, and looms yet capable of producing substantially more than the present output.

The Third Report concerns the potteries—an industry which has a world-wide reputation but has been losing ground during the last few decades. Here too the workers see their livelihood threatened unless the level of efficiency is raised and it is a striking tribute to the new trend of thought in trade union circles that this plan for Reconstruction of the Pottery Industry should have been prepared not by the Government or by employers but by the National Society of Pottery Workers. The Report says that out of 327 factories in the Stoke-on-Trent area, where 85 per cent of the production is concentrated, there were only 10 firms employing more than 800 workers while 150 firms employed less than 100. Technical efficiency before the war was very low and most of the smaller factories were completely obsolete. The Report emphasizes that it is referring not to “small units producing specialized ware, for which it is quite likely there will always be a place in the industry, but simply old and dilapidated factories, producing under more or less primitive conditions the kind of common-grade ware that could be better done by mass-production methods.” The vast majority of all the factories are “badly constructed, inefficient and a menace to the health of the workers employed in them.” The Report advocates nationalization as the only final solution of the industry’s problems but recommends a short-term program which will bring about as much advance as possible under Government control. The production of standardized ware of a higher quality than wartime utility ware should be continued and increased, and the Report urges that a large-scale experiment in Government bulk buying should be put into operation guaranteeing a mass market for standardized ware. This might be of special importance if it could be applied to the export trade, which is already assisted by the Government’s Export Credits Guarantee scheme. The State would thus enter into partnership with the industry both in planning for mass production and in underwriting the risk of the market. Minimum standards of technical efficiency and health safeguards would be laid down and enforced by an extension of the existing Lead and Dust Regulations. An official inquiry into the pottery industry has now been set on foot by a tri-partite working party sponsored by the Board of Trade and consisting of representatives of employers, workers and the Government. Similar inquiries are being undertaken in the housing, boot and shoe, and furniture industries.

These reports on particular industries are symptomatic of a growing recognition that there must be no return to the prewar stagnation and lack of enterprise. Much attention has been paid to the striking comparisons of output per worker employed in the United States, Britain and Germany, made in an article by L. Rostas in the *Economic Journal* of April, 1943. The figures are derived from the Census of Production for each country in one of the three years, 1935, 1936 and 1937. The conclusion drawn is that "industrial efficiency—as measured in production per head—was roughly similar in Great Britain and Germany while in the United States it was more than twice as great as in the other two countries." If account is taken of shorter hours in the U.S.A., the contrast is still more marked, since hours worked averaged 38.6 in the U.S.A. and 47.2 in Britain. Some of the most striking comparisons for particular industries are as follows:

VOLUME OF OUTPUT PER EMPLOYED WORKER IN THE U.S. COMPARED WITH THE U.K.¹

	U.S. output in % of U.K. output
Radio sets	482
Motor cars	419
Iron and steel products	400
Machinery	280
Soap	279
Rubber tires	266
Coal	261
Rayon and silk	160
Cotton spinning	120
Cement	106

The average U.S. percentage, for all industries weighted with British output, comes to 238. The lead of U.S.A. is greatest in the heavy industries, automobiles and radio. The only case where British output per man approached equality with that of the U.S.A. is cement. On the other hand, it is noteworthy that the increase in output per head in U.S.A. between 1929 and 1938 was only 8 per cent compared with an increase of 20 per cent in Britain in the eight years 1929 to 1937.

Two other striking comparisons illustrate and largely explain the higher output per man hour in the United States. First, in 1913, according to calculations by Mr. Colin Clark, capital per head in the U.S. was already 44 per cent greater than in Britain—and it would not be surprising if now, more than 30 years later, this figure had risen to nearer 100 per cent. The average American worker produces more per hour mainly because he has more mechanical equipment to help him. Secondly, consumption of electricity per head in 1937 was 414 kilowatt hours in Britain, compared with 771 in the U.S.A.; and consumption of electric power in American indus-

¹ Data for 1935 in U.K., 1937 in U.S.

try was probably about 75 per cent greater than in Britain. Output per man hour is closely related to the amount of horsepower consumed.

It is too optimistic to expect that the stagnation and restrictionist outlook of the thirties has completely disappeared; but there is reasonable ground for hoping that just as the crisis of the war called forth unexampled feats of hard work and determination, so the spur presented by the needs of reconstruction and the challenge to increase exports will result in a political and economic atmosphere favorable to enterprise, investment and higher productivity per man hour.

Britain led the rest of the world in the Industrial Revolution and has for too long been inclined to rest on her laurels. In the new Industrial Revolution, which modern science and technology are bringing about, the United States has an unchallenged superiority and has set a goal for other countries, including Britain, to imitate.

The key question that faces the Government, industrialists and workers of Britain, is how long it is going to take them to reach the American level of output per head. If they maintain a steady rate of $2\frac{1}{2}$ per cent per annum increase in productivity, it will take nearly 30 years to reach this modest goal. Is it impossible to make progress at 5 per cent per annum and so halve the time taken? That is the issue on which the future of British industry and the standard of living of her people depend.

Harnessing Public to Private Enterprise

Grounds for cautious optimism are to be found in a combination of favorable circumstances. First, the end of the war with Japan came far sooner than was expected; secondly, the United States Senate ratified the San Francisco Charter including the creation of the Economic and Social Council, Stabilization Fund, International Bank for Reconstruction and Development, and Food and Agriculture Organization; and thirdly the change of Government in Britain has given hope of a new approach to economic problems based on democracy, social justice and technical efficiency. There is no guarantee that the road to peace and prosperity will be easy; on the contrary it will be beset with appalling difficulties of baffling complexity. But at least there is ground for sober confidence that an era of progress is at hand.

Much will depend on the detailed policy of the new Labor Government of Britain. That they will set in the forefront the interests of the common man wherever they conflict with monopoly and privilege, can be taken for granted. They are committed to nationalization of the Bank of England and the mines and later of transport and power. These are the pivotal points on which the verdict of the electorate will be accepted without demur. So long as a primary feature of any reorganization under public ownership is greater efficiency, greater stability and less social conflict and labor

unrest, the whole economy of the country, the greater part of which will still function under private enterprise, is bound to benefit. Nationalization is a means to an end, not an end in itself. Its object is to provide the necessary foundation and stimulus for a concerted effort to raise the National Income and provide the wherewithal to finance schemes of social security and educational and cultural progress. Nationalization does not by itself increase the National Wealth. If it should in fact lead to decreased efficiency and bring about the disastrous consequences that its opponents have predicted, it will be judged accordingly and condemned by many of those who have voted for it. It is accepted as an economic and political experiment—as a means of achieving greater social harmony and escaping the calamitous results of too blind a subservience to the workings of economic fate.

One of the Labor Government's first acts has been to reassure the Cotton Industry that it is not to be nationalized and that a Commission representing employers and operatives with a Chairman nominated by the Government is to prepare plans for reorganization and development. It is a hopeful augury that within half an hour of his appointment, Mr. Isaacs, the new Minister of Labor and National Service, who was this year's Chairman Designate of the Trades Union Congress, was able to avert a threatened railway strike. In its first reaction to the responsibilities of office the Government has been seeking to establish confidence and to prepare the ground for solving the vast problems of demobilization, reconversion and transformation of trade and industry from a war footing to peacetime needs. Whether or not it succeeds in its efforts, its message to the nation will be: "More striving and less strife."

Governments Aids to Modernization

The impact of Socialist ideas on British industry seems likely to take forms which would surprise and confute the controversialists of the last generation. The experience of wartime control, which in spite of its shortcomings has been accepted with astonishing good-will and has achieved its success largely because it has been the fruit of voluntary co-operation rather than of bureaucratic regulation, has underlined, and accustomed men's minds to three fundamental principles of democratic society. First, we are all in the same boat together; the general interest must come before private interests; and there must be a firm hand at the helm to steer the course and escape the rocks ahead. Secondly, we claim the right to choose the helmsman and judge him by results; no individual, no party and no class has any vested right to manage the boat or dictate where it shall go. Thirdly, the State is no despotic Gestapo separate from or alien to the community of free men; it is merely an instrument to achieve the common purpose and to express the common will.

This leads to an empirical and undogmatic attitude, which is in keeping with Britain's long tradition of solving political, religious and economic conflicts in a spirit of tolerance and logical compromise. If one were tempted to rationalize the evolution that is taking place, it might be described, in the jargon of Hegelian dialectic employed by Marxists, as a conflict of two opposites—socialism and individualism—being resolved in a higher synthesis which is neither one nor the other but a fruitful combination of both. Alternatively, one might say that Britain seeks to learn a new way of life—combining the political freedom which is the heritage of American democracy with the economic democracy which is the ideal of Soviet Russia. But these are vague words that may mean little or much according to the interpretation placed on them. Let us try to conclude our survey, therefore, by sketching very briefly a few of the possible developments to which this harmonizing of public and private enterprise may give rise.

The role of the State is to do things that private individuals and private corporations cannot do—or cannot do as well. Its most important task, symbolized by the Labor Government's decision to nationalize the Bank of England, is to control the "economic climate." This involves a rapid extension of what may be called the new science of economic meteorology—forecasting the storms ahead, tracing the onset of "cold fronts" and "depressions" and developing statistical bureaus with recording apparatus and economic "thermostats" for each industry and for the economy as a whole. Through its control of currency, credit, public finance and investment, the State will henceforth assume responsibility for ensuring equilibrium between national production and national expenditure and for seeing that full use is made of the nation's resources of labor and capital. This goal—and it is as yet no more than a goal to be aimed at—is common to thinkers of many schools and transcends differences between Socialists and non-socialists.

The State's next most important task is to promote economic efficiency through the encouragement of enterprise and technical progress. In certain key industries, such as coal and transport, it will seek to do this by substituting public for private ownership. But in general there will be established a growing partnership between Government and industry comparable in certain respects to the relationship which has existed for many years in the U.S.A. between Government and farmers. Already the Government is interesting itself to an increasing extent in the location of industry. It is leasing its war factories and building new factories in those areas where unemployment and stagnation were specially concentrated before the war. As landlord to the small business man it is paying special attention to the best lay-out of factories and the provision of amenities and information services. This may well develop in time into something analogous to the help given to farmers by the U.S. Agricultural Extension Service and the work of

County Agricultural Organizers in Britain. There will be growing points of development which will be fostered and encouraged by publicity and demonstrations, including perhaps the operation of publicly owned model factories, where new techniques will be tried out. There will be a large-scale development of training schemes, so that workers will learn to acquire greater adaptability and greater variety of skills; and there will probably be added to this courses in management in all its branches sponsored by professional bodies like the Institute of Industrial Administration and supported by joint contributions from the Government and the industry concerned.

Side by side with this growing interest in and support for technological progress the State will continue to guide and finance scientific research and the establishment of Industrial Research Stations. The Department of Scientific and Industrial Research will turn from its preoccupation with defense projects to resume its peacetime activities in making grants to such institutions as the Research Associations serving the Wool Textile Industries, the Cotton Industry, the Linen Industry, the Paint and Varnish Industries and many others. The National Physical Laboratory and other Government research laboratories will play an increasing part in studying new processes and making the results of research available to all in the national interest instead of allowing them to be monopolized under private patents. Applied science will become the basis of a national scientific advisory service for industry surpassing in its complexity and scope the advisory service already provided for agriculture. In this way, the State might within a generation revolutionize the outlook of thousands of small industrialists whose contribution to the National Income is in the aggregate so much greater than that of the large companies.

EFFECTS OF THE AMERICAN LOAN

It is too soon to appraise what effect the credit of \$3,750 million from the United States will have on these objectives, policies, and problems. In general, the objectives will remain unchanged, but the policies must now be fitted into a broader framework and made consistent with the principles of the proposed International Trade Organization. The task of providing solutions to many of the most pressing problems will be made easier, but the credit alone will not solve the most basic questions facing the nation. In fact, to the extent that the credit adds to the aggregate external liabilities, the necessity for an over-all expansion in British exports will in the long run be intensified. The greatest contribution in the immediate future will stem from the additional manpower which the credit places at British disposal, by directly or indirectly facilitating purchases from the United States. The pace at which industrial reconversion and modernization may proceed will, therefore, be substantially accelerated. Much needed machin-

ery and equipment will be available in greater quantities, enabling British manpower to be concentrated on other industrial activities where it will be required. The credit may also prove to be a stimulating influence for the export industries, hastening the restoration of peak production and thereby placing the economy in a stronger international position.

Personal consumption standards will not be improved materially for some time despite the credits extended, since it is clear that the backlog of demand is such that exceptionally heavy drafts on the credit would result from complete elimination of all controls over imports. The long run advantage of Britain will best be secured by satisfying needs on a priority basis, with those segments of the economy which contribute the most in terms of output receiving first claim.

CONCLUSIONS

In the light of the above analysis it would be rash to give a too positive answer to the question posed at the outset. The further steps in scaling down foreign indebtedness, and the way in which the United States economy adjusts itself to the role of a creditor nation are vital elements in the situation on which no final forecasts are possible at the present time. Consequently we must bear in mind that the estimates presented earlier are put forward as a possible goal rather than as a forecast of what is probable.

The chief point of difference between Britain and the United States is that in Britain there will not be enough men for the job to be done, while in the United States there may not be enough jobs to go round. Hence the United States has to find ways of increasing both consumption and investment while Britain has to increase her investment by restricting her consumption.

A target for annual net investment of £1,500 millions—18 per cent of the net national expenditure and nearly three times the 1938 level—might be achieved in 1948 so long as consumption rises not more than 7 per cent above its 1938 level or 25 per cent above 1944. Investment at this rate would be sufficient to meet the most urgent needs for making good war damage, for re-housing on a moderate scale with an increasing balance from 1944 onwards for meeting foreign indebtedness.

So long as the present world hunger for goods continues there will be no lack of demand for exports; and the number working for the export trades may have to be increased from about 850,000 in 1938 (300,000 in 1944) to 1¼ million in 1949. This in itself will impose a severe limit on production for home consumption. Under conditions of full employment and good wages the demand for higher standards of services in distribution, recreation and catering will be difficult to resist. Some increase over the wartime level will be necessary but the most that can be prudently planned will be a return to the prewar level at the end of four or five years. The

decision to continue the wartime control powers for five years after the end of hostilities, and the maintenance of the "austerity" program restricting both domestic consumption and the import of consumption goods to Spartan levels, are both signs that for some time ahead consumption will be restricted in favor of rehabilitation and investment.

The best hope of raising the standard of living, without falling short of the investment target, is to be looked for in two directions: first, in reduction of armaments and armed forces; and secondly, in increased output per man hour and greater economy in distribution.

The role of the State must be to do things that private enterprise cannot do—or cannot do as well. It must provide a favorable economic climate for business through its control of currency and public finance, and thus ensure that full use is made of the nation's resources of labor and capital. It must also promote technical efficiency by stimulating scientific research and invention and by co-operating with management and labor in the achievement of higher output per man hour. Where private ownership has created conditions which bar the way to higher output—as in coal mining—Government must take over to clear the way for technical progress.

The success of such a program will largely depend on the degree of optimism and mutual confidence with which Government, Business and Labor face the future. Given co-operation and social harmony, economic progress might be more rapid during the next generation than at any time in history, not only in Britain, but throughout the world.

CHAPTER IV

FRANCE

by SAMUEL P. HAYES JR.*

I. INTER-WAR ECONOMIC DEVELOPMENT (1919-1939)

Ten years after the first World War, France reached the peak of her economic power. She had rapidly repaired the devastation caused by war. The return of Alsace-Lorraine brought her rich iron and potash deposits and important textile plants, and made it possible for her to increase her exports sharply. She was nearly self-sufficient in agricultural products—fully so, if one takes into account her overseas possessions. She produced two-thirds of her coal, and large amounts of hydroelectric power, and had important metal, food-processing, chemical, textile, automotive, and metallurgical industries. Her output and export possibilities were important enough to qualify her as a leading member of many international cartels, including the steel cartel and the cartels concerned with fertilizers, chemicals, rolling stock and electrical equipment.

The France of the inter-war period showed at first considerable economic vitality, both in recovery from the war and also in new capital formation. Among the outstanding accomplishments of this period were a great improvement in her roads and highways; a large expansion of her power production, making possible the electrification of most rural areas as well as a considerable part of her railroads; and a marked expansion of her automobile, electro-metallurgical and chemical industries.

Finally, the French economy was characterized by certain traits that gave it greater stability and basic strength than most other industrial nations had. French business units (in agriculture, industry and trade) were predominantly of small or middle size. Although her industry was well developed, her economy remained well-balanced, with about as many of the population (somewhat more than a third) employed in agriculture as in industry, and with about a quarter in trade and the professions. Of the agricultural population, about two-thirds were actually small landholders in their own right. This balance of industry and agriculture, combined with

* The writer wishes to express his appreciation to Virginia Guild, Barbara Rogers, and, particularly, Marcia Harrison, for their assistance in the preparation of certain of this material; and to M. Robert Mossé and M. René Arnaud for their helpful suggestions concerning it.

a substantial measure of self-sufficiency (especially if one includes the production of France's overseas possessions) and only a small degree of economic concentration except in a few industries, meant that world depressions came late to France and with reduced impact, unemployment was rarely a serious problem, personal and social security was great, and even a wartime disruption of foreign trade was not of critical importance.

On the other hand, France's economic development was handicapped in this period, as earlier, by certain psychological traits of the French. These have been termed by Robert Mossé, *megalo*phobia (fear of bigness), *neo*phobia (fear of the new), and *techno*phobia (fear of machine technology). These fears sprang from the French emphasis on the primacy of the individual spirit, and from the strength of the individual Frenchman's ties with the past. The benefits of mass production were felt to be overbalanced by the accompanying disadvantages of bureaucracy, red-tape, lack of flexibility, and anonymity of employees. In a stable France, where generations had followed the same trade or profession, or tilled the same land, traditional ways of doing things had very great appeal. Innovations in technology were opposed solely on the ground of newness, quite apart from the pronounced reluctance of Frenchmen to spend money for new equipment until the old was quite beyond repair. This did not prevent farmers, France's most conservative group, from acquiring autos, radios and electricity, or from using chemical fertilizers, newly developed varieties of seeds and agricultural machinery. But it was a formidable obstacle to any rapid modernization and rationalization of French industry and agriculture. Finally, applied science had little appeal to Frenchmen. Pure science, yes. And the arts, particularly the art of human relations. But the reduction of familiar human activities such as handicrafts, bookkeeping, personnel selection to highly routinized and mechanized techniques awakened the dread of the machine becoming master rather than servant of the human spirit.

Coupled with these general French traits in inhibiting new investment in this period were three particular economic factors of considerable importance. The first was the gradual deterioration of France's monetary and political position, particularly in the late 1920's. Inflation, the flight of French capital, attempted deflation, and two devaluations of the franc were internal reflections of a general financial instability throughout Europe, characterized by the cessation of reparations payments, repudiation of war debts, international movement of "hot" money, and the final wave of bank failures that marked the beginning of the Great Depression. Monetary insecurity, particularly after 1931, naturally restrained investors from risking their capital in France as well as elsewhere, and their hesitance was reinforced by the formation in 1936 of the Popular Front, with a program of social legislation which many capitalists felt was inimical to their interests.

The second factor was the cartelization of much of French industry

which, by eliminating competition and following a high-price low-volume policy, removed the stimulus to heavy investment in low-cost mass-production machinery.

The third factor was the continuance in this period of the traditional French drive for self-sufficiency, particularly in agriculture. Its effect was to channel the small continuing stream of investment capital into types of production that contributed to France's self-sufficiency, even if these were relatively unproductive uses for this capital.

As a result of both psychological and economic factors, French capital formation in the inter-war period was relatively modest, and frequently directed to uses which did not contribute substantially to an increase of economic productivity. In 1939, France found herself entering a great war with much of her plants, equipment and methods in agriculture, mining, manufacturing, transportation and service industries in poor condition and behind the times.

II. CAPITAL LOSSES DURING THE WAR (1939-1940) AND OCCUPATION (1940-1944)

While the stimulus of war brought about a large capital expansion in the United States and some other countries, nothing of the sort happened in France. On the contrary, French real capital assets decreased steadily, even from the reduced levels of 1939, as a result of German exactions from the French economy and neglect of upkeep, and of damage from bombing and military action.

During four years, the Germans took from the French economy great quantities of food, horses, wines and liquor, wood, iron ore, steel and hydroelectric power. More important, Germany took also one-half of France's locomotives, rolling stock and trucks, and most of the existing stocks of raw materials for industry. Total occupation costs imposed on France by Germany are estimated at 860 billion francs, equivalent to more than half of the French public debt at the war's end. These costs include amounts spent for quarters, food consumed in France, and goods and services purchased by individual soldiers, in addition to the cost of the commodities and equipment exported to Germany.

Although few new war plants were built in France by the Germans, much of the existing French industry was forced to produce for export to Germany. Truck factories were converted to tank production. Tire plants were supplied with synthetic rubber, and France was allowed to keep a portion of the production for the essential needs of her own economy. Chemical plants made simple types of explosives. Cement plants produced almost exclusively for the Todt organization's never-ending construction of fortifications around "Festung Europa." Alumina, optical glass, leather, naval stores, and potash (Germany preferred to close her own over-developed

potash mines and use the miners for munitions production while drawing agricultural potash from Alsace) went in great quantities to Germany. The French were not asked to produce aircraft, V-weapons, synthetic gasoline, radar equipment or instruments of other sorts. Before the Germans left France, they took to Germany the most modern machine tools they could find, and the most skilled workmen.

Supplies available to the French people were even further reduced by the almost complete cessation of imports and by the action of the Germans in holding industrial activity to a low level. Imports were almost entirely cut off, although some German synthetic rubber was provided for tire manufacture. Agricultural production fell off because of the lack of imports of phosphates and farm machinery. Although French industry normally consumed four or five million tons of steel a year, it was allowed only about one million. X-1-1' N4-

Shortage of manpower also limited potential production. Probably 300,000 French soldiers and civilians were killed in France, by acts of war or by the occupying Germans. One and one-half million war prisoners, workers, and political and racial deportees were taken from France. The Minister of Justice, Pierre Teitgen, stated in August 1945, that the "labor which millions of French people were forced to perform for the enemy represented 12.5 billion man hours lost to France." Finally, even those who were available for work were weakened by sickness, privation, and malnutrition. In consequence, French industry as a whole operated during the war at only about 50 to 60 per cent of pre-occupation levels of production.

This was a period of great capital consumption. Plant and equipment wore out through use or through lack of lubricants or properly skilled labor; or stood idle and deteriorated, or became obsolescent. The fertility of the land decreased. The herds of cattle lost weight and gave less milk. Farm and residential and public construction was deferred. Farm machinery and food processing facilities wore out and were not replaced. Railways, bridges and roads were allowed to go without necessary repairs. Consumption in France everywhere outran production. Until this consumed capital is replaced, France's assets will not regain even the level of 1939.

Actual destruction during the bombing of France and the ground fighting was not as great as might have been anticipated, although it was still considerable—one-fifth of all structures were destroyed, on some estimates. In general, mining and industrial plant and equipment were relatively undamaged, as were most public utilities. Many bombed factories reported destroyed showed, on subsequent examination, no serious or permanent damage to the equipment and machinery. Farming was disrupted to only a minor extent. Important damage was limited to the ports and dock installations, the inland transport system (by road, rail and waterway), and certain towns, particularly in Normandy. 24164

Port areas were badly damaged by Allied bombing and by actual fighting, and the harbors were filled with ships sunk by the Germans. Harbor watercraft were blown up or sunk, and the docks and installations were thoroughly demolished. Many of the channels had become so silted that much dredging needed to be done even after the harbors had been cleared of sunken ships and mines. The traffic capacity of the six largest French harbors was reduced in these ways by more than three-quarters, although much of this damage has now been repaired, at least with temporary installations. A total of \$200 to \$300 million could be productively applied to the rehabilitation of France's ports, in addition to large amounts of French raw materials and labor.

Far more damage was done to France's inland transportation system. Much of this was due to Allied bombing, which concentrated on this strategic element in the German military organization. But German requisitioning was also important. France lost nearly half of her locomotives, and between 50 and 60 per cent of her rolling stock; and the remainder is very badly worn. In October 1945, the Minister of Finance stated that France needed 10,000 new locomotives. The total value of locomotives and rolling stock needed for French railways probably exceeds \$1 billion.

The French railways themselves were badly hit—marshaling yards crippled, railroad stations ruined, five thousand bridges blown up, track badly worn, and signaling systems and repair shops badly damaged. Many of the repairs made by the Allied armies were of a temporary nature. Imported materials needed for rehabilitation and reconstruction of the railways will probably exceed \$100 million.

Inland waterways also suffered and in early 1945 were only 50 per cent usable. More than 500 bridges over inland waterways were destroyed and many docks and dams damaged. Parts of the Seine River and other rivers and canals seemed paved with sunken barges. France's last Lend-Lease agreement estimated immediate needs of \$50,000,000 worth of barges from the United States, and this was only a beginning.

Only one-third of the prewar half-million motor trucks were left in operation, and they were old, worn-out, and in need of tires, batteries and spare parts. France tried in 1944-45 to obtain \$100 million worth of trucks from the United States but the supply situation made this impossible. She is now attempting to make up the deficit from her own production.

Devastation of the towns in the areas where the fighting took place in the summer of 1944 was not very widespread, but it was very complete. Such towns as Caen, St. Lo, Coutances, Avranches, Pont-Leveque and Lisieu were largely destroyed. Le Havre as a town disappeared. Dunkirk, Cherbourg, Lorient and other port towns were very badly damaged. In October 1945, French officials estimated that 400,000 houses had been totally destroyed, while 1,570,000 additional buildings had been damaged.

There is clearly a big job of reconstruction to be done, but much of this will, of course, be carried out with local materials, requiring relatively little in the way of imports and investment from abroad.

In March of 1945, French officials were already pointing out their need for 300,000 to 350,000 skilled German building trade laborers to rebuild the "1,400,000 buildings which have been destroyed," and the Ministry of Reconstruction had in hand city plans for 600 communities that should be rebuilt completely. The Allied Control Council in Germany agreed that France should have 1,100,000 German prisoners of war to aid in reconstruction work, and as of October 1945, 600,000 were already working in France. At that time, President De Gaulle stated that this German labor would be needed in France "for a great many years."

Before the war, France had a merchant marine of some 1,300 ships, with a gross tonnage of three million tons. In 1939, 35 per cent of these ships were 15 to 20 years old, while 22 per cent had had more than 20 years of service. During the war, French losses are reported to have reached 62 per cent of her merchant fleet. Presumably replacements will be made, since income from shipping services has always been an important item in balancing France's international payments.

France's wartime losses included probably 500,000 dead, a substantial number of immigrants who were unable to immigrate, and the enfeeblement of much of the population through privation and malnutrition. France's population was estimated in October 1945, to be 1½ million less than before the war.

France's assets are thus today far less than they were 15 years ago. Tremendous effort and materials must be expended before she can again achieve the productive capacity she already had reached in the late 20's.

Official French estimates place total reconstruction costs at 2,500 billion francs (\$20.83 billion; based on the May 1946, exchange rate of 120 francs to the dollar). The French Minister of Reconstruction, Raoul Dautry, estimated in November 1945, that total occupation costs and war damage to France were 4,800 billion francs. These figures appear too high, however, in view of generally accepted estimates that total French wealth in 1939 was under 7,000 billion francs of current value (a 1939 franc is assumed to be worth 3.4 current francs), and that French production during the occupation was at least 40 per cent below prewar levels, thus severely limiting France's potential exportable surplus. It is more likely that total occupation costs, war damage and depreciation amounted to approximately 2,800 billion current francs. Of this, probably 600 billions came out of national income during the occupation, 1,000 billions represented national wealth exported to Germany, and 1,200 billions were due to war damage and depreciation. The total of the two latter figures, or 2,200 billion cur-

rent francs, therefore represents France's capital losses (nearly one-third of her total wealth in 1939). Replacement of her lost wealth will require substantial amounts of foreign capital, unless the French follow the Russian example of the twenties and tighten their belts to make domestic capital available from a domestic production that will continue for some time at a fairly modest level.

III. OPPORTUNITIES FOR RATIONALIZATION AND EXPANSION OF PARTICULAR SECTORS OF THE FRENCH ECONOMY

President De Gaulle stated on November 23, 1945: "All reforms depend on the increase of production," and the reconstruction of much of France's industrial establishment "at least provides us with the opportunity of modernization." Investment in capital expansion and modernization will obviously contribute most to the increase of production if directed to those industries and types of agriculture for which French material and human resources are best adapted.

In the following summary, the industries are reviewed which promise the greatest opportunities for productive investment in the decade ahead.

A. Agriculture

French production of agricultural products in general does not need expansion beyond prewar levels. Built on a traditional economic and political policy of self-sufficiency, France has succeeded in large measure in feeding herself, though only at considerable cost in higher prices, subsidies and an inefficient use of her land, labor and capital. A justification for this relatively inefficient production was found in protecting France from international economic disruptions, and in making it possible for individual farmers to grow diversified crops. The importance to the farmers of retaining their way of life, backed up politically by greater proportionate representation of farmers than their numerical importance in the population would justify, is likely to continue to be of great significance in determining French agricultural and trade policy.

Taking purely economic considerations into account, it is clear that France should increase her production of fruits and fresh vegetables beyond the levels of 1938, while reducing her production of wheat and beet sugar. Furthermore, considerations of national health have motivated the Provisional Government to encourage a shift of emphasis from cereal grains to meat, dairy products, and fresh fruit and vegetables, and from wine to fresh milk and fresh fruit juice, including grape juice.

More important than these shifts of emphasis, however, is French agriculture's need for intensive modernization and rationalization, and for readjustment of enterprises to fit into a world of expanding economy. In mod-

ernizing and rationalizing French agricultural methods there would be considerable opportunities for productive investment in farm machinery both for cultivation and for processing.

French farming methods and yields are excellent for such intensive crops as truck crops, fruits, fine wines, and flowers. However, the size of many French holdings and French farming methods are relatively inefficient in growing fodder, cereal grains, sugar beets, and "ordinary wine" and in raising cattle, all of which have been protected by high tariffs from more efficient foreign competition.

Increasing farm sizes so that large-scale, mechanized farming methods can be used is of primary importance in increasing the productivity of French agriculture in some regions. Although 16 per cent of the agricultural land in France is already in farms of 240 acres or larger, and an additional 42 per cent is in farms of 50 to 240 acres, many French farms are not large enough for mechanization. The Provisional Government announced a program of readjustment of land holdings for the purpose of making more modern methods of farming practicable. Use of co-operative organizations in processing and marketing is already well established. Even if land holdings are not extensively readjusted, an expansion of co-operative activities in production would itself encourage the wider use of farm machinery both in cultivation and in processing, and result in substantially greater productivity and lower costs.

B. Hydroelectric Power

France has already developed an excellent system of hydroelectric power generation stations, based on the waters of the Alps, the Pyrenees and the Massif Central. The further development of these hydroelectric power resources will be one of the cornerstones of post-war industrial development in France, with electric power increasingly employed in manufacturing, mining, railroads and mechanized farming.

Between 1928 and 1936, production of electricity increased sharply in hydroelectric plants. By 1938, annual production of electric energy in France was approximately 20 billion kilowatt hours, of which only 10.5 billions were hydroelectric power. Full development of France's water resources would theoretically make possible the generation of 30 billion KWH annually.

In 1938 and 1941, new programs for developing hydroelectric power were initiated. The 1938 program, which involves building of dams on the Dordogne and especially on the Rhone, will yield, when completed, an output of $4\frac{1}{4}$ billion KWH per year. Before the German occupation, very little was completed; only 900,000 additional KWH could actually be produced with the new installations. Completion of the 1941 project, which

involves construction of dams on the Isere and again on the Dordogne, would install new capacity for the generation of another $4\frac{1}{2}$ billion KWH per year.

The Alpine region is an especially favorable area for the development of hydroelectric power. The precipitation is abundant, some of the mountains exceed 4,000 meters in height, while glaciers and snowfields are nature's storage reserves against dry seasons. Its resources may be developed also at relatively low cost, since the slopes are steep and sharp broken and the flow abundant. In the most favorable areas, a narrow dam is sufficient to obtain a head of water.

However, full development of French resources will undoubtedly require the construction of many large dams in other regions, such as the Truyere project in the Massif Central, opened in 1933, which has a height of 345 feet, a capacity of 305 million tons of water and is said to be the largest dam in Europe.

Direct war damage to power plants in France was relatively small as compared with the Netherlands, for example. After five years of enemy occupation, the replacement of worn-out equipment, repair and maintenance supplies is greatly needed and will obviously be the first step in post-war plans for hydroelectric power. Next, and much more important in terms of total new capital however, will be the construction of new plant, new dams, new transmission lines and grid systems.

C. Coal Mining

Coal looms large in French eyes, particularly after two years of a liberation which brought such short coal rations that almost none was available for domestic heating, rail transportation was severely restricted, and many industries were forced to operate at less than 50 per cent of capacity.

France has never in recent years produced more than two-thirds of her coal needs, and her deficiency of coking coal has been acute. Even what she did produce was mined relatively inefficiently, at least as measured by production per man-day. French coal output per worker is lower than in Great Britain, and less than a third of that in the U.S. This low productivity is partly due to the narrower seams being worked in France, but also to failure to rationalize and mechanize the mines. Production per man-day was one-quarter lower in the spring of 1945 than it had been in 1935, due to the poor condition of both mines and miners. A year later, however, total coal production had passed prewar levels but output per man, although improving, was still below prewar.

The French Government has begun the nationalization of northern and northeastern coal mines. Some integration of the coal mines in the French-occupied Saar with the French economy may relieve the immediate pressure

to step up production in France's own coal mines. But nationalization will undoubtedly mean that French coal mines will be thoroughly rationalized and equipped with the most modern machinery possible.

D. Iron and Steel

Before the war, the productive capacity of the French iron and steel industry was second only to the German industry, in continental Europe. France was one of the leading European producers of iron ore. In 1937, she was exporting more than half of her ore to be smelted in other countries, and 38 per cent of these exports were sent to the German iron and steel industry. Today, her Lorraine iron mines are relatively undamaged and their equipment quite modern. On the other hand, France imported one-third of her coal requirements before the war, especially metallurgical coke, largely from Germany, Belgium and the Netherlands.

The obvious interdependence of the coal, iron and steel areas of Belgium, Luxembourg, the Netherlands, Lorraine and the Rhine-Westphalian region has given rise to a number of schemes for some super-national organization that will bring about an integrated economic development there. The French drive for the detachment of the left bank of the Rhine and for the internationalization of the industrial areas of the Saar, the Ruhr and Westphalia, is one movement of this sort. Whatever may be developed along this line, it is clear that there will be an opportunity for substantial investment in the French iron and steel industry (particularly in new smelting facilities) in this area, and this investment will be strongly encouraged by the French Government. Announcement has already been made of the Government's plan to erect a very large modern sheet-steel mill.

There are particularly good opportunities in the south of France for the manufacture of alloy and specialty steels, in view of the presence there of hydroelectric power for electric steel furnaces, and of a substantial local production of aluminum and magnesium for certain steel alloys.

To what extent France will inherit a portion of the prewar German iron and steel markets is one of the imponderables. German industry will certainly be kept out of the running for many years to come, and some of the countries that had become highly dependent on Germany before the war (the Balkans, the Netherlands, Scandinavia, etc.) will be in the market for capital goods and will look to France for at least some of their needs.

It is not expected that the prewar European iron and steel cartel will break up merely because of Allied control of Germany. The French still support cartels, although tending to look on them now as organizations making possible regional specialization and mass production. The future operations of cartels may, however, be limited by the decisions reached, at

the coming international conference on trade, on the American proposals to limit international cartels.¹

The prospects for the French iron and steel industry, then, involve both an intensive modernization and rationalization of its plant and equipment, for these were already outmoded before the war and are now in much poorer shape; and an expansion of its productive facilities, particularly for smelting France's own ore (with imported coke), for producing special and alloy steels, and for fabricating capital equipment. If this is successfully carried out, and if French iron and steel products are low in cost and of high quality, a large expansion of French sales in the European market is to be expected.

E. Light Metals

An expanding post-war consumption of light metals for airplane bodies, light-weight engines and railroad cars, high speed machine tools, automobiles, etc., is everywhere expected. French industrial prospects seem bright for at least two of these metals: aluminum and magnesium.

Before the war France produced 600-700,000 tons of bauxite per year of very high quality, and has the resources to produce a great deal more. Furthermore, France produces a great deal of hydroelectric power. With these basic resources, her aluminum industry itself could be vastly expanded.

France's prewar magnesium output of 3-4,000 tons per year was derived from Mediterranean salt beds as well as from some imported magnesium salts. The chief French process for producing magnesium also utilized the abundant hydroelectric power of southern France.

Before the war, French production of bauxite exceeded her capacity to manufacture alumina; her alumina producing capacity in turn exceeded her capacity to smelt virgin aluminum. The capacity of rolling mills and other fabricating facilities was adapted only to the prewar level of aluminum output. The Germans followed the policy of importing the French surplus of bauxite, 350-400,000 tons per year, and did not develop French aluminum production facilities to any extent. France could produce 250,000 tons of aluminum a year solely from her own resources, if economic conditions justified this expansion.

Before and after the occupation, magnesium production varied between 1,500 and slightly over 3,000 tons per year. There were four or five small producers and one large plant jointly operated by two of the large producers of aluminum. The location of light metal plants was designed to utilize supplies of hydroelectric power in the Alps and the Pyrenees as well as domestic raw materials.

¹ "Proposals for Expansion of World Trade and Employment" (Department of State, publication no. 2411, November 1945), and "Suggested Charter for an International Trade Organization of the United Nations" (Department of State, publication no. 2598, September 1946).

The light metals have an important advantage over other metals by combining lightness with durability. Whether or not post-war consumption increases to the full extent justified by their superiority will depend very largely on whether or not aluminum and magnesium are made cheap and abundant.

The expected breakup of the prewar aluminum cartel, and competition from the newly expanded American aluminum industry, are favorable sign-posts in the direction of lower world prices for aluminum and therefore greater total world consumption of aluminum. The probable trimming-down-to-size of the great German aluminum industry will favor the position of French industry in European markets. Full growth of the French light metals industry, however, probably cannot be attained under its restrictive prewar organization. The cartel system, and the protection afforded by high tariff barriers, made it possible to prevent either domestic or foreign competition from bringing the price to a level that would encourage much wider usage. It remains to be seen whether the new French Government will intervene more forcibly in favor of a lower-price policy, which is essential to a widened market. Another obstacle to large development of this industry, with its high power requirements, may be France's lack of adequate coal and electricity for all competing needs.

Whether it will be advantageous for France to expand aluminum and magnesium production farther will depend largely on the policies adopted by other countries. Capacity to produce light metals was enormously expanded during the war. How far this war-expanded plant is used to compete in world markets will influence how far it will pay France to expand. It would hardly seem like good economy to build large new light-metal plants in France while great war plants for producing the same products were standing idle in the United States, Canada and possibly even in the U.S.S.R.

F. Chemicals

Before the war, France was approximately self-sufficient in heavy chemicals, a net importer of fine chemicals, dyestuffs and plastics, and a net exporter of potash and synthetic fertilizers. In 1938, exports of chemical products were \$46,800,000, second only to iron and steel in value of product exported. The prewar chemical industry was well diversified, including:

(1) basic industrial chemicals such as sulphuric acid, nitric acid, synthetic ammonia, chlorine, caustic soda, soda ash, calcium carbide, etc.;

(2) finished chemical products essential to related industries, such as dyes, synthetic fertilizers, insecticides;

(3) finished chemical end-products for export and consumption, such as perfume, plastics, synthetic textiles, pharmaceuticals, photographic chemicals.

Although France is not wholly self-sufficient in terms of chemical raw materials, there are available within the country and in the colonies some of the chief essentials of a chemical industry: coal, hydroelectric power, pyrites, natural phosphates, potash, rock salt, rosin and turpentine, limestone, etc.

In the post-war period, we may expect modernization and expansion of prewar chemical industries. It is reported, for example, that French manufacturers anticipate placing large orders for new equipment for chemical production. The French hope to produce for themselves many of the organic chemicals formerly imported from Germany, using as an important raw material coal tar taken as reparations from the coal areas of Germany. In addition, there will be a further development of the new chemical industries, plastics, synthetic fibers, electro-chemicals. For these, France has the essential hydroelectric power, some of the basic inorganic chemicals and abundant naval stores. In these industries, as with the light metals, industrial skill and experience, marketing possibilities within the country, and foreign trade prospects will probably play a larger role in post-war development than will the mere availability of the necessary raw materials. An industrialized France, and especially an industrialized France without German competition, has especially good prospects for the development of the new products of the chemical world.

G. Shipping

France's merchant shipping fleet before the war was an important source of foreign exchange. Unlike Great Britain, the United States, Norway and other prominent shipping nations, France did not use heavy tramp steamers for bulk freight, but concentrated on light, small expensive cargo carried on passenger ships. Although this type of shipping did not prove very profitable it was important for French exports, and it was supported by government subsidies, by such colonial trade monopolies as that with French North Africa, and by other protective devices.

France's merchant ship losses during the war, coupled with the very heavy losses suffered by competing fleets (especially by the British and Norwegian fleets) may encourage her to attempt to build up a relatively strong merchant marine. Furthermore, her expected desertion of the policy of self-sufficiency may result in more—and heavier-type—exports and imports which might be carried in French ships. However, one deterrent to a building-up of the French merchant fleet is the existence of the great fleet of ships built by the United States for wartime use, and the uncertainty surrounding their disposition. Another obstacle is the apparent inadequacy of the French ship building industry for the task of turning out the kind of ships that would be needed for France to enter seriously into the highly competitive field of shipping.

While French shipyards can do much of the necessary replacement of France's prewar merchant marine, they are not adapted to the efficient production of regular cargo ships, especially for shipping heavy freight. The shipyards are situated far from coal and iron areas. The labor employed is a highly skilled and costly group who specialize in war ships, ocean liners and special purpose vessels. The yards are not constructed for mass production and are scattered among the many ports of France. French shipyards launched only 27,000 tons in 1937, while British shipyards produced 921,000 tons. Any serious effort to develop a heavy French merchant fleet would have to be based on ships built elsewhere, a luxury that France could hardly afford. The French purchase of 100 Liberty ships from the United States represents the beginning of the necessary building up of the French merchant marine.

H. Minor Industries

Many minor industries in France offer opportunities for productive investment. In sum, these bulk larger than any single industry described above, except agriculture.

For example, tourist traffic is one of France's most important sources of foreign exchange. Yet tourists have too often been taken for granted, without really effective measures on a national scale to make traveling in France particularly attractive. Hotels might be modernized to cater to American standards. Sports might be made easier to play. Special travel facilities might be provided to facilitate trips to famous localities and points of interest. France must shift from a "tourisme de luxe" to a "tourisme de masse." France is already so intrinsically attractive to tourists that a reasonable volume of investment in this direction might pay very high dividends.

Again, France already has an excellent optical goods industry. With some German optical plants dismantled for reparations, and the production of others under the control of the powers occupying Germany, there may be an opportunity for a considerable expansion of this industry in France.

The production of plastics is in its infancy in France. With large home production of casein, lumber and naval stores, and with large prospective imports of pitch from Germany, this industry should develop rapidly. Similarly, the production and weaving of artificial fibers—particularly rayon—has a promising future in France.

French civil aviation is to be encouraged. The nationalization of Air France, the revival of Air France's big international airlines, the promotion of low-priced touring planes and of production of planes for export, and the plans for many new airfields in France indicate that the Government plans aggressive support for this form of transportation.

Rural electrification may well come in for further development, although most farms already have electricity. The production of electrical appliances might be largely increased, to parallel the expected increase in production of electricity and rural electrification. Dairying needs expansion and modernization of its equipment. Cattle stock needs to be improved. Hides and leather are treated with antiquated equipment and methods. The vineyards need re-working after years of inadequate attention. Lumbering areas need better machinery and, in particular, an improved system of transportation to port. In all of these fields, and others of even less individual importance, capital is needed for expansion, modernization and rationalization.

IV. GENERAL FACTORS LIKELY TO AFFECT THE VOLUME OF FOREIGN INVESTMENT IN FRANCE

Of fundamental importance in all plans for France's future development is the answer to the question of Germany's future. Although France's trade with Germany before the war was quantitatively relatively unimportant (10 per cent of France's imports for consumption, 5 per cent of France's exports), Germany's future is of tremendous importance to France in terms of possible reparations, especially coal, machinery, and labor, and in terms of the possible integration of certain Rhineland and French industries. The most probable assumptions seem to be (1) that the Allies will so limit the German production of iron and steel, heavy chemicals and light metals, that France will be able to develop her own industries and take over some of Germany's former export markets as well; and (2) that although some substantial equipment may come to France as reparations, there will be need for large additional capital investment in French industries in order to realize their optimum development.

Another basic factor affecting France's economic future is the direction which her government policy takes with regard to domestic prices and wage-levels. This is, of course, tied up with the great increase in the public debt and in the monetary circulation as a result of the war and of the German occupation.

France's external financial condition did not seriously deteriorate during the war and occupation, nor during the first year of liberation, a result in large part of the Lend-Lease aid given her by the United States. Her external debt was small. Her foreign currency assets, either officially controlled by the Government or those which are probably held in even larger amounts in private or corporate accounts abroad, constituted a large reserve. And, unlike the United Kingdom, for example, French banks held no large foreign deposits subject to sudden withdrawal. On the other hand, the need for heavy imports of food, raw materials and capital equipment,

tional Constituent Assembly (elected October 21) passed a bill to nationalize the Bank of France and four of the largest private banks in France. At the same time, the Government agreed to prepare and submit a measure that would establish effective Government control over the policy and operation of all banks known as "banques d'affaires." Such banks finance and often take majority holdings in industrial enterprises.

Until the time of de Gaulle's resignation, France had seemed to be devoting more attention to rebuilding its Army and Navy than to coping with economic restoration. In late 1945 the leading leftist parties adopted an agreed program which included "to realize immediately a massive reduction of the military credits." President de Gaulle's resignation was due in large part to a dispute with the Assembly over the size of the proposed military programs, which were taking over a quarter of the total budget. If French military expenditures could be reduced to peacetime levels, inflationary pressures might be considerably reduced.

The disparity between import needs and available foreign exchange will make it necessary for some time to come for France to continue strict import controls. One type of import control, favored by most European nations, is the bilateral trade agreement. France has already signed such agreements with Switzerland, Belgium-Luxembourg, Denmark, Spain, Argentina, Norway, Finland, Italy, Hungary, Czechoslovakia and Sweden, some of which could furnish substantial capital equipment for France's manufacturing industry, for her rail transport, and for her power plants. Agreements with other nations are under negotiation. Such import controls obviously limit the quantity and type of investment in France that foreign investors may make.

Closely related to the Government's program of financial control is its program of nationalization of credit, insurance, gas utilities, power and coal, already initiated, and possible nationalization of the merchant marine, transportation and metallurgical industries. Where outright nationalization is not undertaken, it is still the intention of the Government to "direct" many aspects of French economic life. (De Gaulle spoke of it as an "économie dirigée.") On March 2, 1945, General de Gaulle told the Consultative Assembly: "The State must assure the full development of the main sources of energy—coal, electric power, oil—and of the main means of transportation and communication. We must increase iron and steel production to the necessary level; we must use credit to direct national savings into the vast investments needed for such economic developments and to prevent private interests from running counter to the general interest."

This policy of governmental direction of the nation's economic life seems to have been the rationale behind the retention of the *Comités d'Organisation* established under the Vichy Government. With the former man-

agers of these Committees replaced by men acceptable to the groups influential in the Government, and with the committees now called "*Offices Professionels*," they will evidently continue to control the allocation of raw materials, fuel, power, transport priorities and possibly also manpower to individual enterprises, and to supervise their production plans, implementing overall government policy through such controls. In February 1945, Robert Lacoste, Minister of Industrial Production, described this development as an attempt to attain a State-directed economy by transforming Vichy institutions "in such fashion that they will be much like Soviet institutions except that we will retain the foundation of private enterprise." Import control, made necessary by a severe shortage of foreign exchange, will undoubtedly also be used to carry out the Government's policies for particular industries.

That the French Government is to direct and control the nation's economy is further indicated in the new French Constitution, adopted in the national referendum held on October 13, 1946. Besides stating as fundamental principles the right and duty to work, the right to economic security and the right of workers to strike and to participate in collective bargaining (and in the management of business), the Preamble to the Constitution states that "all property and all enterprises that now have or subsequently shall have the character of a national public service or a monopoly in fact must become the property of the community." Article 25 states that an Economic Council is to be established, and "must be consulted by (the Council of Ministers) in the adoption of a national economic plan for full employment and the rational utilization of our material resources."

It is clear that full employment and productive use of resources are to be actively promoted by the Government, whatever interference in customary economic relationships this may involve. Furthermore, the definition of property or enterprises affected with a public interest is broad enough to permit the nationalization of a wide variety of economic activities. The steps already taken in this direction are mentioned above.

How control of the economy is maintained, however, is less important than what is done with this control. The nationalization of credit does not of itself ensure the use of credit to develop the economy properly. Without aggressive policy direction, the public bankers may continue to make the same types of loans as they would have made as private bankers. The same is true of an industry, which may follow a high-price-low-volume policy under government control just as under private control. The significant question for an economic society is, *what is done* by those having economic power? Presumably, national economic policy will be to maximize employment, maximize investment of all savings, modify the distribution of income so that private concentration of capital is discouraged while broadly-

based saving and investment are encouraged, increase international trade, and modernize, rationalize and expand industrial and agricultural production.

Of course, extensive government economic controls may at first frighten away potential private investors of "capitalist" countries. This is likely to be true at least until the government concerned has shown itself able to achieve a satisfactorily functioning domestic economy, and one that makes possible reasonable freedom for managerial initiative with pecuniary rewards proportionate to the risks taken, the success of decisions made, and the rewards obtainable elsewhere for similar functions.

On the other hand, the Government may take positive measures to make investment attractive. For example, having determined that it was national policy to expand and modernize the productive facilities of the iron and steel industry, it might declare itself ready to make certain concessions to attract domestic or foreign capital, possibly even going so far as to guarantee an assured return on its investment. Well-planned direction of capital is not at all unattractive to much of the capital available today, which prefers a low return with good security to a higher possible return with little security.

This governmental interest in investment and development of France's resources may be important in overcoming two obstacles that have hitherto stood in the way of France's economic progress. First is the financial conservatism of Frenchmen. They honor security above all things, and are by nature *rentiers*, not plungers. Risk capital is hard to raise, and requires a high return. The Government may meet this by reducing the attractiveness of cash or government bonds, as by the imposition of specially designed taxes, or by increasing the attractiveness of investment in government-sponsored enterprises, as by guaranteeing some portion of the investment, or the income of the company in question.

The second obstacle is the unprogressive attitude of many French industrialists with respect to modernization and efficient production. Their pre-war attitudes have already been discussed. The attitude of many even at the present time is summed up in a French businessman's recent comment: "Why should I invest in improved plant and processes? I can already sell all that I can produce, and at very good prices." The economic policy of self-sufficiency and the extensive development of cartels have tended to reinforce such an attitude. The government can easily shake these gentlemen out of their lethargy by helping competitive enterprise to modernize, by cutting tariffs, or by directly setting lower prices (or higher wages) for the backward industries, thus forcing them to seek the greatest possible productive efficiency, even at the cost of additional investment of capital. Whether it will take such steps or not is unclear, but official speeches have shown that the government clearly realizes the importance of ensur-

ing that modernization does take place. In Minister Plevén's July 4, 1945, speech before the Consultative Assembly, he pointed out that the average age of industrial equipment in France is 30 years, compared with an average age of 8 years in other major Allied countries. He said, France "must modernize or die. Modernization is not only a technical problem; it is also a psychological, political and moral problem." In December 1945, the French Cabinet emphasized industrial and agricultural modernization by setting up a "general commissariat for planning, modernization and equipment," to be headed by M. Jean Monnet and to report directly to the President.

There has also been a recognition, among influential Frenchmen in economic circles, that France has paid too high a price for self-sufficiency. The military argument for autarchy has lost much of its relevance with the advent of air attack, V-weapons, atomic bombs and super-national organization of military strength.

There are signs that France will gradually abandon at least her more exaggerated manifestations of self-sufficiency.² This will result in the flow of new investment being directed to those types of production for which France is particularly well suited. If pursued consistently, it will also result, and this will be important, in higher productivity throughout industry and agriculture, as costs are forced down under the healthy stimulus of competition from abroad. To hold her own even in her chosen and appropriate types of productive effort, France will have to see that she maintains a heavy flow of new investment in modernization and rationalization of her productive facilities. Not to do so well will jeopardize her real standard of living.

Certain temporary factors have impeded the rehabilitation and development of French economy. Among these are the lack of coal, and the shortage of transportation and raw materials. France has had to go for more than two years on extremely short coal rations. Until the coal problem is solved (presumably by the import of German coal as soon as production and transportation from Germany make large importations possible, or possibly by the movement of Polish coal by water) French industry cannot move forward at full speed.

A second presumably temporary factor arises from France's present severe budgetary difficulties. Heavy expenditures have been necessitated by the disruption of the French economy, with the resulting need for unemployment relief (or the guaranteeing of a portion of factory payrolls, which

² A significant move in the direction of greater international economic interdependence is the ratification (on December 5, 1945) of France's economic accord with Belgium, Luxembourg and the Netherlands. Under the agreement, the four countries will seek to complement each other's economies, especially with regard to food supplies, raw materials, and industrial and agricultural machinery, and will assist each other in creating new industries.

amounts fiscally to the same thing), help for returning prisoners of war and forced laborers, increased wages for government workers and soldiers, subsidies for some consumer goods, and other types of social benefits. Many of these expenditures will continue, for France's government is quite as sensitive to the appeal of "Social Security" as is ours or Great Britain's.

Revenues in 1946 are expected to cover less than one-half of projected 1946 expenditures, and the total 1946 budget was estimated in April 1946 to be 345 billion francs. The continuation for long of such an unbalance between revenues and expenditures, coupled with the corresponding growth of France's short-term debt, would not be conducive to foreign private investment in France.

Finally, the sharp schism between labor and capital that existed in France before the war can hardly be expected to have disappeared even in the fire of resistance to the occupying enemy. De Gaulle apparently followed a relatively conservative economic path, despite his support for economic controls, but his conservatism was bitterly attacked by influential groups. If France is unable to work out a satisfactory *modus vivendi* for labor and capital, if French capitalists themselves do not show confidence in the future of France by investing substantial capital of their own under the controls and directives administered by the Government, foreign capital may understandably be somewhat shy.

V. SUMMARY AND CONCLUSIONS

In 1939, much of French industry and agriculture was already run-down and outmoded, in some measure because of her cartelization and economic policy of self-sufficiency, but more especially as a result of her financial and political difficulties. The war accelerated this capital deterioration and stopped investment. Damage to ports, some towns, all forms of transport, and to plant and equipment was tremendous. Supply difficulties for the first year of liberation were so great that the economy continued to go backward rather than forward. By failure to encourage investment before the war, and by inability to obtain capital equipment during the occupation and the first year of liberation, French physical capital declined steadily for fifteen years. By the fall of 1946, a marked expansion in employment and production was well under way.

France needs to get back to where she was before the war, and then to move on to still higher levels of production and consumption. She must repair war damage, replace worn out and obsolete equipment, and make up the accumulated capital investment in rationalization, modernization and expansion which has been deferred for fifteen years. This represents an extraordinary opportunity for wisely directed investment, since France has great resources in her fertile lands, her moderate climate, her forests and

mineral deposits, her well-developed public utilities and transportation system, her manufacturing plant and equipment and, most of all, in her healthy, energetic, intelligent, and imaginative people.

The direction new investment will take, and, to a considerable degree, the volume of new investment which will take place, will be largely determined by the governmental policies adopted. There will clearly not be a wide-open field inviting investment in whatever type of production the investor himself favors. In a directed economy such as that planned by the newly-elected Government, the Government will decide that a certain volume of investment is desirable, and will attempt so to manage its monetary and fiscal controls that the proper amount of domestic and foreign capital is forthcoming. Similarly, the Government will decide what particular industries, and possibly what particular technical processes within each favored industry, should be developed; and will either make such sponsored investment particularly attractive to the available capital or may even go so far as to make direct investments itself in sponsored industries. The Government's policies on related questions, such as price and wage controls, deficit spending, and social security, will also markedly influence the volume and direction of investment.

The French governmental policy seems likely to encourage investment especially in mechanization of agriculture and food processing; development of hydroelectric power facilities; modernization of coal-mining equipment; expansion of smelting and finished steel capacity and of southern French specialty steel plants, and integration of the northeastern French iron and steel industry with neighboring coal, iron and steel producing areas; expansion of aluminum and magnesium productive facilities; expansion of particular chemical industries, e.g., organic chemicals, plastics, synthetic fibers; modernization and rationalization of shipbuilding, and expansion of the merchant marine; expansion and modernization of many less important types, including dairying, optical goods, civilian air travel and tourism.

The success of these endeavors will rest to a large measure on the volume of foreign capital that can be attracted. France's own production in the near future will not be great enough to permit her to lift herself by her own bootstraps, as richer countries can do. She will only be able to spare from her own production a minor share of the capital necessary for the investment program envisioned above. The major share will have to come from abroad.

There is no question about the opportunities for productive investment in France. There is question only about the readiness of the foreign investors of the capital-exporting nations to embark again on heavy lending abroad. It is to be hoped that the developing consciousness of the oneness of the economic and political world, reinforced by the development of uni-

fying international economic and political institutions, will give new life to the absolutely indispensable international movement of capital.³

³ The following references on French economic conditions are of special value:

Jacques Granville (Pseudonym), "Economic Reconstruction in France," *World Economics*, March-June, 1945, Vol. III, nos. 1-10, pp. 9-38.

Robert Wolff, *Economie et Finances de la France, Passé et Avenir*, (New York, Brentano, 1943).

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CHAPTER V

POST-WAR INDUSTRY IN THE LOW COUNTRIES

by J. WILNER SUNDELSON

INTRODUCTION

In prewar Europe, the industrialization achieved by the Netherlands and Belgium-Luxembourg surpassed that of any other country except Britain. The density of population and the proportions engaged in non-agricultural pursuits both offer striking evidence of their advanced industrial development. Only Java, with 800 inhabitants per square mile, exceeded the density of population in the Low Countries. The proportion of gainfully employed in industry and commerce, and the proportion of persons residing in urban communities, are higher in the Netherlands and Belgium than in any other country in Europe. Measures of savings, investments, and foreign trade also show the advanced stage of industrialization. In 1937, per capita trade was \$122 for Belgium and \$102 for the Netherlands, as compared with Sweden's \$99, the United Kingdom's \$91, France's \$47, and Germany's \$40. Even the relatively small amount of agriculture found in the Low Countries is so specialized and intensive as to be, in large degree, semi-industrialized agricultural activity.

This chapter discusses the conditions which made such advanced economic development possible, the serious modifications caused by the war, and the economic future of the Low Countries.

I. *Basic Factors*

The Low Countries are geographically located so as to benefit industrially and commercially from the movement of goods between the European hinterland and overseas areas. Belgium and the Netherlands are located at the mouths of great rivers, where ports and connecting inland waterways make possible a huge waterborne trade. This trade, together with the movement on other readily available means of transportation, supported large processing industries. Unfortunately, this trade also made the Netherlands and Belgium peculiarly dependent upon a prosperous Germany, to and from which trade flowed.

The highly skilled labor population and the large number of persons with entrepreneurial, managerial and commercial talents have also been a

great economic asset. Coal is the only other primary resource needed for industrial production which the Low Countries have in abundance. Other basic raw materials are either qualitatively or quantitatively inadequate. The elaborate educational systems for training workers and transferring skills, have thus made an important contribution to the development of highly skilled workers and to the resulting low labor cost per unit of output.

To the natural endowments of rivers and coal and the human resources of the Low Countries must be added the fortuitous distribution of raw materials in nearby and accessible areas. Belgium and Holland traded coal profitably with each other and with Germany. France had iron ores in excess of her own needs. The Dutch chemical industry used the byproducts of the Belgian iron and steel industry. Germany, France, and the Low Countries complemented each other industrially in these and many other ways. World War I did not disturb this pattern of industrial relationships; World War II unfortunately has.

A further factor contributing to industrialization was the link between each of the Low Countries and its colonial empire. The greatest part of the Belgian Congo's exports of copper, tin, cotton, diamonds and oil seeds flowed to the mother country. From it, in turn, the Congo obtained the major portion of its imports. Belgium also benefited from the exclusive position of Belgian capital in the Congo. Belgium's capital surplus found profitable employment and contributed dollars and sterling credits to Belgium's balance of payments.

The Dutch had an even greater colonial empire supporting the homeland. The West Indies supplied foreign exchange and employment for Dutch shipping.¹ The Netherlands East Indies, although less useful than the Congo as a source of raw materials to the mother country, were an important outlet for capital. Two-thirds of the \$1.5 billion of foreign investments in the NEI are Dutch, and returns to Holland in the prewar period were as high as \$150 million a year. Dutch residents in the NEI earned another \$150 million annually.

Industrialization in the Low Countries also thrived because of the political climate in which State assistance to labor and toleration of monopolistic practices were mingled. Since the latter part of the Nineteenth Century, strong right wing socialist parties have been prominent. Their success in improving the lot of industrial workers through expanded government social services discouraged large-scale adherence to the extreme left or right. The continually expanding social services, particularly in Belgium, also helped to maintain low direct labor costs by reducing pressure for wage increases.

State ownership is no more widespread in the Low Countries than it is

¹ Holland's foothold in South America is rich but undeveloped and has never been significant to the economy of the mother country.

in other European countries, though many of Holland's coal mines and some farms are owned by the State. However, where industry needed positive assistance in the form of subsidies or special tariff agreements, these were readily forthcoming. The encouragement which each of the Low Countries gave to monopolies and cartels in organizing domestic markets and in carving out secured foreign markets was also of great importance. The great Phillips electric cartel, Unilever margarine, Royal Dutch Shell oil, and the sugar and artificial silk combines reveal the extent to which the cartel philosophy flourished on Dutch soil. The Dutch have also been leaders in the commodity control schemes built around the products of the Netherlands East Indies.

Belgium is even more closely identified with cartels and domestic monopolies, such as those in the chemical, glass and sugar industries. In the international cartels, as for example in steel and electrical supplies, the Belgians were charter members.

That the war altered and disrupted the pattern of economic life in the Low Countries is, of course, well known. It is less generally appreciated, however, that post-war conditions are making difficult, if not impossible, the re-establishment of this prewar pattern.

II. *The Effect of the War on the Low Countries*

Any war of the great powers affects the Low Countries adversely, even if they are not directly involved, for their economies are completely dependent on foreign trade and must be disrupted by any interference in the flow of essential raw materials.

In World War II the Low Countries felt the full fury of total war. Immediately following the outbreak of hostilities, Belgium and the Netherlands were gripped by an economic paralysis engendered by the fear of a German invasion. The German blitz, fast-moving and thriving on weakness, collusion, indifference and the traditionally inviting absence of natural barriers, ended with the occupation of both countries, literally within the space of a few days. This fast-moving occupation was sparing of plants and industrial facilities; the drawn-out struggles which flattened large parts of Italy and Russia were avoided.

As a result, the productive machine of the Low Countries was incorporated in the Nazi industrial orbit and was thus assured a considerable volume of activity during the occupation. The Nazi sphere was also big enough to embrace many of the raw materials which Belgium and Holland required, though petroleum, fats and oils, and cotton were naturally in short supply throughout the Nazi-controlled areas, as were all the products which both the Allies and the Nazis had to forego due to Japanese successes. The incidence of these shortages was reduced, however, by the shift-

ing of industries to new sources of supply, as for example, in turning part of the Belgian cotton industry to rayon.

On the other hand, the German agricultural policy, which favored the production of bread grains and vegetable oils for human consumption, disrupted the prewar agricultural pattern. It depleted the livestock population as well as the soil, which was already suffering because of absence of the usual heavy quantities of fertilizer.

The Nazis also imposed other burdens of lasting significance. Their technique for financing the occupation produced an inflation of currency and credit. They deported, imprisoned, and killed large numbers of workers. Their use of large areas in the Netherlands for military purposes invited Allied bombing, and their wanton destruction of Rotterdam heavily increased the cost of reconstruction.

The colonial empires of the Low Countries were cut off but suffered varying fates. The Netherlands' South American and West Indies empire flourished with the growing Allied demand for bauxite and petroleum products. The Netherlands East Indies, between the fall of Holland and Pearl Harbor, benefited from sales to the feverishly stockpiling Allies, only to fall then under the burden of Japanese occupation. The Belgian Congo, aiding the Allies with its valuable raw materials, enjoyed a great boom. However, it was thus diverted from its former contact with the homeland. The huge flow of products to the U.S. and U.K. financed increased imports and also resulted in the growth of large sterling balances for until the fall of 1944, when the Congo dropped out of the dollar pool, the dollars derived from sales to the U.S. were converted into sterling.

III. Factors Which Will Delay and Make Difficult the Return to Prewar Levels of Productivity

During the first post-war year, the Low Countries were faced with the herculean task of restoring their economies and their position in the world. Their success was impeded by factors which are physical, political and financial in character.

The whole complex system of public utilities was run down. The communication and transportation systems were thoroughly disorganized and looted. In the Netherlands, particularly, the destruction of basic plant and equipment was very heavy, and in both countries depreciation and obsolescence have been great.

Unfortunately, the effort which will be expended on reconstruction, time-consuming and costly though it will be, will not bring the Low Countries back to the competitive position vis-à-vis the U.K. and the U.S. which they occupied before the war. Speed will mean makeshift repairs, the use of less efficient surplus equipment, and poorer materials.

They will have to compete, however, with countries which made tremendous technological advances during the war and which require much less time for reconversion before they can proceed with peacetime production.

The Low Countries are already suffering a competitive disadvantage by their inability to benefit from the current seller's market. Large sums are being spent on the type of commodities normally exported by Belgium and the Netherlands. These sums, however, are being spent in the United States and Britain, Sweden, Canada and Australia; they are also being spent on the American, British and Canadian army surpluses. The Low Countries, normally suppliers themselves, can now only wait in line with the other claimant nations of the world.

Estimates of reconstruction costs in the Low Countries have been made in terms of money costs, tons of material and man hours of labor. The Dutch have estimated that tangible losses are in excess of \$3 billion. This estimate includes losses through property destruction, disappearance of capital goods, inability to replace worn out and obsolete equipment and other decreases in real wealth. Other losses due to German exploitation of Dutch production, deportation of Dutch labor and the disruption of trade are estimated at an additional \$2.5 billion. Dutch officials have estimated that, at post-war price levels, a five-year investment program of over \$8 billion is needed to rebuild the Dutch production potential. The fact that five years are required is as important as the amount.

If Germany should be made to pay heavy reparations to the Low Countries and if adequate restitution of looted property is made, the cost of reconstruction would, of course, be reduced. There is, however, very little prospect of the Low Countries obtaining substantial reparations.

In Belgium war damages have been estimated at under \$4 billion, an estimate which may be somewhat exaggerated in comparison with that of the Netherlands. Losses in both countries have been of the same type. In two cities particularly, Antwerp and Liège, post-liberation bombing caused huge material damage. In Antwerp almost one-third and in Liège two-thirds of the prewar buildings were wrecked.

The effect of the war upon the physical and psychological condition of the workers, although very important, is difficult to measure. To the losses in man hours of labor worked must be added the political and social strife which is an outgrowth of the hardships of the occupation and the dissatisfaction with present conditions.

Both countries have also suffered serious losses of manpower. The Poles, Italians and Arabs who formerly did the heavy underground work in the coal mines are no longer available. Both countries have lost the major portion of their prewar Jewish populations. With this population has gone the

special skill on which the diamond-cutting industry had been built and some of the entrepreneurial talent of the Low Countries.

During the first two years after the war, the Low Countries will find it difficult to obtain certain key raw materials, including tin, and other non-ferrous ores. The shortages will not continue beyond the early post-war years, but the disruption to the pattern of production caused by these scarcities may continue long after the supply situation has eased. The greatest danger is the scattering and shifting of the skilled labor to less productive enterprises.

In addition to the general world-wide shortages, the Low Countries will also have to contend with special supply problems. They previously counted on supplies from areas which are now within the Russian orbit or under Anglo-American military control. Germany traded coal with the Low Countries. It supplied them with chemicals and other necessary materials. Only very limited supplies are now available, and those which are being exported from Germany are not necessarily going to those countries which depended on German supplies before the war.

Some of the products previously secured in Germany can be obtained elsewhere, but the cost and difficulties of transportation sharply reduce the competitive advantage which the Low Countries previously gained through their accessibility. The Dutch and the Belgians are currently paying up to \$18 a ton for mediocre-quality U.S. coal landed at North Sea ports, which then must be transshipped to barges at additional cost. Previously, they paid a fraction of this cost for better coal which was floated in barges down rivers and canals and unloaded at factory gates.

Many of the difficulties of the Low Countries are a result of the disorganization of Germany and might suggest that the recovery of Belgium and Holland require a "soft peace" and the early restoration of Germany's economy. Few people in the Netherlands or in Belgium, which has twice within a generation been invaded by the Germans, seek their own recovery on the basis of Germany's economic restoration. This chapter assumes that the German economy will not achieve the place it held in Europe's trade before the war and that a new pattern minimizing Germany's role will be sought and found. However, such a policy also entails serious hardships for the Low Countries.

Countries which are normally processors and exporters must consider their customers as well as their suppliers. Belgian exports to Germany were over \$57 million in 1938 and were exceeded only by its exports to France and the United Kingdom. Approximately the same situation held for the Netherlands, which exported \$54 million of commodities to Germany, its second most important market. The loss of the German market will create difficulties. To this loss must also be added the fact that for some time the

other continental countries will probably not be able to absorb and pay for anything like the quantity of their prewar imports.

The Low Countries will also suffer from a shift in the whole pattern of world trade. Unless the current efforts to reduce trade barriers and establish a freer flow of international trade are successful, Britain and the other European countries will spend less freely than in the past. The trade of Eastern Europe is being reorientated toward Russia. Colonial areas have already to some extent become accustomed to obtaining supplies in other markets.

The financial difficulties of the Low Countries also delay recovery. Currently available foreign exchange assets are far below the levels needed to finance urgently needed imports even when the amounts now held, as in Belgium, are above prewar levels. Imports are therefore being held below the limited volume which supplies, shipping, and port capacities would permit.

Belgium's Financial Position

Ninety per cent of Belgian imports were generally paid for with exports, and earnings from Belgian foreign investments and services normally covered the relatively small deficit in Belgium's balance on merchandise account. Belgian investments abroad were valued at \$1¼ billion, only a fraction of which is believed to have suffered as the result of enemy action. Prewar gold reserves were reported at \$625,000,000, held in the U.S., the Bank of England, and the Bank of France.² As of September 1, 1945, Belgium's gold position had improved since the beginning of the war by some \$110,000,000, largely as a result of developments in the Congo. Belgian holdings of sterling grew almost \$200 million during the war despite the substantial drains on the sterling balances due to the activities of the government-in-exile. Even these increased gold and foreign exchange balances, however, are unable to meet Belgium's current needs.

Belgium's internal finances also present serious problems. While prewar currency in circulation was estimated at \$1¼ billion, just before liberation it had reached a level of \$4½ billion. Bank deposits rose in the same proportion, and the public debt grew from under \$1¼ to over \$3¾ billions, as of August 31, 1945.

A plan to curb the inflation was put into effect a month after the liberation. All National Bank notes were withdrawn and all bank deposits blocked. Securities were also subject to controls and a census was taken of Belgian assets held abroad and Belgian assets held by foreigners. This took \$2¼ billion worth of francs out of circulation, \$1¼ billion of which was

² It will be recalled that Vichy turned over the Belgian gold in France to the Nazis but that the U.S. Courts forced the French to compensate Belgium from French balances held in the U.S.

permanently sterilized and \$1 billion gradually deblocked. The Belgians expected available supplies and services to permit a gradual increase of purchasing power which would not be inflationary.

Imports, however, did not arrive. Allied troops helped absorb the few remaining supplies, and troop pay expenditures and huge reverse Lend-Lease and mutual aid activities helped counteract the deflationary reforms. By September 1945, it was estimated that circulation had again risen to \$2¾ billion.

A further element of the reform was a system of profits taxation designed to mop up those gains made during the war which were not caught in the monetary reform net. The government fell before the tax program could be put into effect, and in September 1945, the new government introduced a new program comprising a 70 to 95 per cent tax on exceptional wartime profits and a 5 per cent capital levy.

This monetary and tax reform is one of the outstanding post-liberation acts of Belgium. The speed and energy with which it has been effected compares very favorably with similar action taken in France and Holland. Had imported supplies been available and had the military been less active, the reform would have resulted in a considerable financial improvement. As it is, it at least prevented further deterioration.

Netherlands' Transport Industries

Holland's financial position, both external and internal, is more difficult than that of Belgium. Over \$1 billion of the Netherlands' gold and foreign securities were lost—half the total—the loss being divided almost equally between the two categories.

Dutch external capital investments amounted to \$5 billion at the outbreak of the war. The extent of the damage in such areas as the Netherlands East Indies is still unknown and the whole question of how far these assets will remain under the political control of the Netherlands is very uncertain. Holland's balance-of-payments position would of course suffer great damage if the contribution to its annual foreign exchange credits provided by the exports of the Netherlands East Indies to the dollar countries was lost.

Financial developments within the Netherlands paralleled those in Belgium. By V-E day, the national debt was six times the prewar level, and notes and demand deposits had increased five-fold.

The attempt to tackle the internal financial position was delayed until five months after liberation. The first step taken was the recall of 100-guilder notes. At the end of September 1945, the remaining banknotes were withdrawn and all bank balances blocked. Although the program was somewhat late in coming, the Dutch achieved superior results avoiding the

leakages which developed under the Belgian scheme. The drastic purge was intended not merely as an anti-inflationary measure but also to reveal changes in the ownership of Dutch wealth for tax purposes and to permit the capture of collaborationist profits. A registration has been made of securities and other negotiable instruments and of foreign assets. The government scheme considered the blocked balances not released to the owners as a tax or compulsory loan. A new capital levy, with rates as high as 70 per cent, has been announced, and the blocked balance may be used in payment of this tax liability.

IV. Sources of Industrial Employment

A survey of the status of mining, manufacturing and transportation in the Low Countries will illustrate the extent to which the various factors discussed above are limiting productivity, as well as the opportunities for expanding production which remain. Agricultural needs in both countries will also be briefly reviewed.

Coal Mining: Belgium

Coal mining is a key to all economic activity in the Low Countries. The industry, which normally absorbed over 11 per cent of the gainfully employed population, produced 29½ million metric tons of coal in 1938, and averaged one million less in the previous two years. This compares with France's coal production of 44.3 million tons and Poland's production of 36.2 million tons. There are two major coal-producing regions. In the southern area, thin seams prevent the use of mechanical aids, other than pneumatic picks, which explains why Belgian coal production has decreased so sharply. The northern area is less difficult to work, but its production is not significant in the Belgian total output.

Belgian coal mines were virtually untouched by war, except for shortages of pit props. These were made available domestically through the drastic cutting down of Belgium's remaining forests, a practice inaugurated by the Nazis. For a short period during the reinvasion crisis, the absence of pit props was a decisive limiting factor.

The major difficulties have been the shortage of skilled manpower and the deterioration of the social and physical well-being of the available workers. One of the main problems has been Belgium's traditional reliance on Poles, Arabs, Italians and other foreign labor for a large share of the underground work. Russian slave labor was substituted during the German occupation. Liberation deprived the Belgians of the remaining foreign workers who were repatriated or otherwise removed from the mines. Belgian leaders are concerned about the impending departure of German prisoners. The labor of these prisoners in the mines made possible most of the gains in coal production achieved since liberation.

Netherlands

In Holland the Limburg coal fields were intensively developed. From 1936 to 1939 production of coal averaged well over 13 million tons per year, about sixty per cent of which came from State-owned mines. Altogether, about 40,000 workers were employed in coal mining. The industry was mechanized and the entire output was obtained through the use of pneumatic picks. The Netherlands specialized in the production of coking coal for metallurgical purposes and were able to export about 6.7 million tons of this type annually, while importing some 4.5 million tons of steam coal. As a by-product of the coking operation, the production and distribution of gas was highly developed; over 70 per cent of the population use gas for domestic purposes.

The coal mine shafts in the South Limburg Province, liberated before the Allied push stalled, were relatively untouched by the Germans. Only the installations above the surface were destroyed or damaged. Other factors, however, caused coal production to fall to less than 20 per cent of the prewar figure. The number of coal miners was sharply reduced after liberation. Fugitives from the Gestapo and others who sought to avoid deportation were safe as miners, and therefore worked in the mines during the occupation but returned to their homes as soon as they could. The weeding out of pro-German elements and the enlistment of many loyal coal miners in the armed forces further reduced the number of available workers. Drastic governmental action, virtually freezing the remaining coal miners to their jobs, has prevented a further decrease in the labor force. The use of foreign workers was not customary in Holland before the war, and on the contrary, Dutch labor emigrated, under government supervision, to Germany, France, other European countries and the Dutch colonies.

Holland has experienced difficulties in obtaining the supplies needed for the rehabilitation and maintenance of the mines, due to material and equipment scarcities.

Until coal is mined at its prewar volume, the economic recovery of the Low Countries will be hampered. They will have less coal and they will use their limited foreign exchange assets to pay for coal imports from the U.S. and Germany at prices so high as to place their manufactured articles at a disadvantage in competitive trade. Furthermore, imports of German coal are currently paid for in dollars by liberated areas.

The coal industry of the Low Countries will suffer until a system is evolved to replace the complex prewar trade pattern. Both countries are short of coking and gas coals, and Belgium lacks coals of high volatile content needed for the iron and steel industry. Previously, Germany, Great Britain and the Netherlands joined Belgium in a cross trade which permitted maximum utilization of available resources in the area. A long-run solution to some of the coal problems has been suggested by several Bel-

gian industrialists who had an opportunity to visit Russian coal mines under Nazi auspices. They were impressed there with the system of burning coal underground, particularly coal in inaccessible narrow seams, and transmitting power rather than shipping coal. Experiments along these lines are now being carried out in Belgium. Another technological aid, the development of which can only be hoped for in some future time, would be coal-cutting machinery adapted to the narrow seams of the Belgian southern area.

Iron and Steel Industry: Belgium and Luxembourg

Belgium's rank among the industrial powers depends to a large extent on its iron and steel industry which supports many ancillary processing and manufacturing industries. Considering Belgium's size, its production is impressive. It produced in 1937, 3.8 million tons of pig iron and 3.9 million tons of steel ingots and castings, as compared with France's production of 7.9 million tons each of both types of products. Five combines, linked together in allotting orders for internal sales and for the representation on the steel cartel, control three-quarters of this Belgian production. To Belgium's output must be added the even more impressive production of the Grand Duchy of Luxembourg, in which 2½ million tons each of pig iron, and steel ingots and castings were produced in the same year.

Belgium imports both the ore and the type of coal needed in the industry, while Luxembourg supplies a small share of its own ore needs and, together with Belgium, leans heavily on Lorraine ore. The use of Lorraine ore has made the steel production process relatively expensive and has forced a reliance on the older basic Bessemer or Thomas converter processes. French production is similarly influenced. The few open hearth furnaces in Belgium do not use the phosphoric Lorraine ore but rely on imported scrap.

Belgium's post-war steel industry may shift to the open hearth process if it can take advantage of the huge supply of battle scrap lying around in western Europe. For the balance of its production, it will unquestionably seek to revert, if arrangements for the movement of coke and ore can be perfected, to its prewar basis.

The Netherlands' consumption of iron and steel was large, with imports coming mostly from Germany, Belgium and the United Kingdom. Since there was no local iron ore, the smelting industry was slow to develop, but just prior to the war some production of pig iron had begun, most of which had to be exported for further processing. One of the most discussed post-war proposals is the development of a large steel industry at IJmuiden. The Dutch count on the site, an open sea and inland waterway port, to provide access to ores and coal. The industry would enhance the industrial self-

sufficiency of the Netherlands but would run counter to the proposed customs union with Belgium and Luxembourg.

Non-Ferrous Metals

Belgium has a large non-ferrous metal industry which uses imported ores processed in its own electrometallurgical and chemical plants. This industry, which included the world's second largest zinc industry, although not based on any indigenous resources, was able to benefit from the exploitation of the Congo's wealth in ores. Inexpensive labor and aggressive selling policies were also important. The industry produces chiefly for export. Although England, a leading prewar buyer, has now developed a zinc industry of its own, German competition has been removed, and the net changes growing out of the war are difficult to evaluate.

Holland's non-ferrous metal industry, like Belgium's, marked her success in industrializing the country beyond the capacity which natural resources alone would have warranted. Imports of tin from the East Indies and Bolivia supported a tin-smelting industry which was one of the largest in the world. The Netherlands, before the war, treated about one-fifth of the world's output, having a capacity of about 30,000 metric tons annually. Imports of zinc concentrates supported a smaller zinc industry, but one which also produced an export surplus. Production varied between 13,700 and 25,300 metric tons. Just before the war an aluminum industry, relying on imports of bauxite from Surinam and from the Netherlands East Indies, was also developing.

Smelting plants have been heavily damaged. The tin mills, idle during the war and needing repairs, may also suffer in the future from competition of the new Dutch-operated mills in the United States.

Chemical Industry: Belgium

Belgium's "heavy" chemical industry is less dependent on imported materials than are the general run of Belgian industries or the comparable Dutch industry. From the waste products of coke ovens and retorts are produced a variety of coal tar derivatives. One group of these, the aniline dyes, has a particularly promising post-war future. If Germany is de-industrialized and her chemical industry destroyed, Belgium may reasonably hope to obtain some of the prewar German markets.

The fertilizer industry, producing for the intensive agriculture of Belgium itself and for export, leans heavily on a by-product of the steel industry, basic slag, of which as much as a million tons were produced annually in prewar years. The fertilizer industry also used Chilean nitrates and North African phosphates, though a small quantity of phosphate chalk is locally available. The zinc industry produces zinc blende, which together

with Spanish pyrites and sulphur from various sources, supported a million-ton annual sulphuric acid output, a third of which was exported. Belgium is also the world's leading producer of copper sulphate, a spray material which uses Congo copper and which eventually lands on French grape vines as one component of Bordeaux mixture.

Various salts needed by the glass, rayon, soap and other industries are also produced in large quantities.

Belgium's "light" chemical industry centers around the competitive glue and gelatine, paint, and photographic chemical fields. Using imported materials and the by-products and waste of its other industries, Belgium carved out important segments of foreign markets and dominated its own. Post-war activity will depend chiefly on the output of the necessary by-products from other industries, on the availability of needed imports, on domestic and foreign demand and on the policies of the Belgian chemical trust, which wields a powerful influence in Belgian industry and government.

Netherlands Chemical Industry

The Netherlands chemical industry reached a remarkable degree of development before the war, considering the limited resources at its disposal.

The synthetic fertilizer industry was of chief importance. In addition to supplying its own needs for nitrogenous fertilizers and superphosphates, Holland annually exported an average of \$8,300,000 worth of fertilizers (mainly superphosphates) during 1937-1939. The raw phosphates were imported largely from North Africa, while domestic sulphuric acid was supplemented by imports from Belgium. Re-establishment of sources of supply for these and other imported raw fertilizer materials may be slow.

Holland also had a large paint and varnish industry, most of the raw materials being imported from the East Indies. Soap and glycerine production served home consumption with only a small surplus available for export. Dutch production of quinine salts, using cinchona imports from the East Indies, accounted for a large part of Europe's total output.

Holland produced no soda ash, however, and only one-half her home consumption of caustic soda, despite the fact that the raw material, salt, was one of Holland's few domestic minerals.

Holland's chemical industry must repair and rebuild wrecked plants. It must await the resumption of economic activity in Belgium-Luxembourg before the residual slag of their steel industries is again available. It must await the flow of potash from Germany or find new sources. From all over the world it must obtain needed raw materials. When these supplies are available, the chemical industry may approach its prewar level.

Other Industries in Belgium—Textiles and Clothing

Belgium's textile industry, combined with clothing, was the ranking industry, measured by employment—it employed more than half of Belgium's women workers. The textile industry is concentrated in the Flanders plain which has been the site of one of the world's chief textile manufacturing areas since the Middle Ages. The numerous small units and the limited amount of mechanization found in the industry may be explained by its age. The Belgian textile industry was largely dependent on foreign trade, with 60 per cent of the cotton and woolen products, and 70 per cent of the linen, shipped abroad.

The linen industry, alone among the textile group, depends on locally available resources. The retting qualities of the lime-free waters of the river Lys, the locally grown flax, and the skilled labor concentrated in Flanders have given this region a natural monopoly. A prewar project was designed to distribute Lys River water under pressure to scattered villages, but it may not be revived because of a new process which obviates the necessity of soaking flax in waters having special qualities.

Belgian processing of yarns, fibers and cloths shows an interesting localization by types. Brussels is the center for clothing and Tournai for hosiery, while both share the bulk of Belgium's important carpet manufacturing. Vilvoorde in ribbons, Lier in embroidery, and Brussels and Bruges in lace are further examples of localization. The carpet, embroidery and lace industries have in common the characteristics of hand work and the fact that they are dying. Of the 80,000 lace workers in Belgium before World War I, only 10,000 were left at the beginning of World War II.

Other Manufacturing Industries

To achieve its level of industrial employment Belgium had to produce a wide variety of products. Vehicles, machinery and industrial equipment were among the important items manufactured.

Locomotives, both steam and electric, rolling stock, automobiles, motorcycles, and particularly bicycles, were produced on a relatively large scale. Competitive conditions required efficiency in the production of engines, dynamos, diesel motors, etc. Much of the Belgian production of machinery took place in comparatively small plants, in which labor was a large component of the cost of fabrication. Because of the low Belgian wage level, these products could compete successfully in foreign markets. This was especially true of machine tools and plumbing and sewage equipment. Electrical equipment, radios, firearms, surgical and scientific equipment were produced mainly for the home market. In these last industries, the introduction of large-scale production methods is unlikely without an extensive development of world markets.

The glass, cement and diamond industries were of international importance. The Belgian glass industry produced a quarter of the world's output of which 90 per cent was exported, and used a cartel arrangement to assure the disposal of Belgium's products at satisfactory prices. The International Plate Glass Syndicate is located at Brussels. All grades of high quality cut-glass and crystal ware, cheap molded glassware, and specialty glassware were produced.

The Belgian cement industry awaits coal for a recovery which will permit it again to compete for the Dutch, U.K., and U.S. (east coast) markets.

Antwerp, together with Amsterdam, dominated the diamond industry, comprising the cutting, polishing and setting of rough stones. The industry employed, at its height, 13,000 skilled workers and another 40 to 50,000 auxiliary workers. The war deprived the industry of its skilled labor, its stones, and a large part of its markets, while new diamond centers in London, Palestine and New York came into being. The trade does not expect Antwerp to recover its prewar position immediately.

The degree of industrialization and urbanization achieved in Belgium could not have been reached unless industries producing domestically needed consumer goods had been developed. Food processing, tanning, paper, books and printing and tobacco were all fields in which domestic needs and occasional export opportunities were met. In addition, a large number of minor industries added to the impressive manufacturing output. From these latter the ability of Belgium to corner shares of the world's markets, as well as its own, can again be noted. Belgium, for example, was one of the leading match producers, exporting over half its average annual production of $1\frac{1}{2}$ billion boxes.

Other Manufacturing Industries in the Netherlands

The Netherlands was less industrialized than Belgium. Of the more than 40 per cent of the population industrially employed in prewar Holland, relatively few were in mining and smelting and the manufacture of chemicals and textiles. Only 88,000 persons were working in the latter industry in 1939; of these 40,000 were in cotton and linen and 12,000 in woolen manufactures. 18,000 persons were absorbed in lace, rayon, carpet and jute production, which was sufficient to meet domestic requirements and still leave 25 per cent of the output for export.

Six months after liberation Holland's own cotton industry was still prostrate with many plants damaged and with materials and coal lacking. Of the 1,200,000 spindles and 400,000 looms in the Netherlands prior to the war, about 11 per cent of the spinning capacity has been completely destroyed and another 12 per cent damaged. Approximately 8 per cent of its weaving capacity has also been lost.

The slow rehabilitation of Holland's textile industry may affect adversely her future export markets. The Netherlands East Indies, Holland's chief prewar textile market, now needs a great deal more from Holland than is likely to be available. Satisfying her needs in other markets for the next few years may make the Netherlands East Indies a less secure market for Holland in the future. The status of this market for Holland will ultimately depend on the political and military struggle now being waged for the control of the islands.

Large numbers of persons were employed in the metallurgical and engineering industries of Holland. Shipbuilding, in which Holland was out-ranked only by Britain, Germany, the United States and Japan, was Holland's foremost industry, constructing both seagoing tonnage and vessels for inland waterways. The average output in prewar years was about 180,000 gross tons. Ship repairing was of almost equal importance. "Patent" slips, floating docks and graving docks were used, with a total capacity at any one time of 350,000 tons of shipping of all sizes. Before the war an average of $2\frac{1}{2}$ to 3 million tons of shipping were handled for repair each year. Within the shipyards themselves between 40,000 and 45,000 men were employed in 1939, with well over 120,000 employed in collateral activities. The flooding of Walcheren and the bombing and destruction of the great ports resulted in much damage. A major reconstruction job must be done on the yards before the Dutch merchant marine fleet can itself be reconstructed and before orders from abroad can be accepted.

The engineering industries were linked to Holland's own needs. Production of marine engines is a natural auxiliary of shipbuilding. This industry will be hard hit by its inability to recover in time to participate in the abnormal war-created replacement demands. Other types of production in which Holland excelled because of her engineering skill were the construction of machinery for sugar mills, oil wells, tin mines, food processing and refrigeration. The needs of the Netherlands and its colonies, as well as an important export market, were filled by these industries.

Unlike the Belgians, the Dutch did not produce much heavy electrical equipment, railway rolling stock, or locomotives. Holland had a leading role in the field of electrical and radio equipment, however, and was the fourth largest exporter of these products in the world. The great Phillips plant at Eindhoven, looted and partially destroyed during the war, was Europe's greatest. Phillips blanketed Holland and that part of Europe assigned to it by the cartel with electric bulbs and radio tubes, though not all of Holland's electrical equipment requirements were met from domestic production.

Holland's diamond industry was severely hit by the war. The confiscation of diamond stocks by the Nazis and the deportation of Jewish craftsmen have entirely paralyzed the world-famous industry. The German loot

of diamonds is said to amount to 50,000 carats. Only some 800 diamond workers remain in Amsterdam, compared to the 3,000 to 3,500 located there before the war.

Of the remaining industries only food processing provided production above domestic needs. Naturally this industry must await agricultural recovery. The other industries such as the building and contracting, paper, leather, printing and furniture industries served home markets primarily. While the current political emphasis in Holland, as in Belgium, is on the export industries, the role of these consumer goods and service industries are, of course, a very important source of industrial employment. In 1930, the last year for which complete data are available, 257,000 persons were employed in the building and contracting industries as compared with 26,000 in chemicals and 20,000 in electric bulbs and radio tubes. The total number employed in industry, not including transportation, was only 1,236,000 in 1930.

This review of the mining and manufacturing activities of the Low Countries reveals a wide variety of industries, heavy and light, serving export and domestic markets and, to a large extent, independent of indigenous resources other than labor and coal. Shortages of coal and of raw materials, the breakdown of trade patterns with neighboring economies, the destruction or loss of facilities and the loss of markets are difficulties common to almost all industries. The interdependence of the leading heavy industries on each other, tends to universalize the difficulties faced by any one industry alone. The importance of foreign trade in the supply of raw materials or the disposal of output must be considered in connection with the financial difficulties limiting such trade.

The Low Countries should be in a position to share in new industries which are expected in the light metals, plastics, chemicals and electronics. However, preoccupation with the support of minimum consumer needs limits the chances for the early introduction of such new industries. Furthermore, during the war the U.S. and the U.K. made large technological advances in these new fields, advances with which the Low Countries are not yet familiar. Even in such a simple process as food canning, Belgian and Dutch factories are reported to be still using methods far more costly in materials than those developed during the war and now widely used in the U.S. and U.K. Steps must be taken to obtain the use of the new processes and methods as early as possible.

Transport Industries: Belgium

Surprisingly enough, Belgium was not a maritime nation. It had only a small merchant fleet (1938: 430,000 gross tons) and an insignificant fishing industry. This small merchant fleet, however, suffered disproportionately severe losses, and two-thirds of the tonnage was lost.

Belgian rivers are extremely well adapted to barge traffic and together with canals supported one-third of Belgium's inland freight movements. Fortunately the barge fleet was not severely reduced. In the first year of liberation, however, traffic was hampered by destroyed bridges.

Belgian road transportation is less developed than Holland's; the railroad network, having the greatest density in Europe, discouraged the use of express and arterial highways. Losses in trucks, however, have been serious, and 25,000 trucks are needed merely to restore prewar capacity.

Belgian railways were hard hit by the war. As compared with the 3,500 main line locomotives in operation in Belgium before the war, one year after liberation there were only 1,500. The Belgian system, which had 109,000 freight cars before the war, in September 1945, was limping along with 71,000 usable cars, of which 22,000 belonged to the Allied Armies.

Losses in locomotives are being slowly made up by the gradual resumption of production. Railway cars are also being built and some have been returned from other areas. American Army surpluses are also helping to fill Belgian needs.

Netherlands' Transport Industries

The Netherlands exploited its geographical position as a gateway to western Europe by the intensive development of its transportation facilities. The merchant fleet ranked sixth in world tonnage and provided earnings of over \$22 million a year. By the summer of 1945 losses had reduced the Dutch merchant fleet to 250 ships, totaling 1.5 million gross tons. This loss of 50 per cent is exclusive of the Netherlands East Indies' fleet, which also suffered severe damage.

Inland water transportation in Holland acquired an importance unparalleled in any other country in Europe. Natural waterways, augmented by the construction of canals, totaled about 5,000 miles, excluding a considerable mileage of narrow branch canals used by vessels of 40 tons and under.

The railway system was less developed than that of other European countries. The total length of standard gauge railway lines was 2,278 miles, with an additional 1,553 miles of narrow gauge track. Road transportation, on the other hand, was well developed, the Dutch having progressed far in building national express highways. These, however, depended on many bridges which must now be rebuilt. Holland's stock of trucks and busses was seriously depleted, and huge foreign purchases are in progress.

Holland's ports, bridges and railroads offer a striking example of the serious reconstruction problem which must be met. The repair of port facilities and the recovery of stolen cranes and other equipment will require at least two years. The damage to ports alone has been estimated at \$150 million. Vessels were sunk in harbors, miles of docks and quays were destroyed, and cranes and dredging equipment removed.

Many of Holland's bridges were destroyed. In North Brabant Province alone, military authorities were forced to build more than 500 emergency bridges after liberation. It is estimated that 70,000 tons of steel would be needed to repair the bridges at Dordrecht, Helel, Zaltbommel, and Geler-malsen. Possible cost of repairing the damage to bridges was estimated at \$20 million.

The cost of reconstructing Netherlands railways, both fixed installations and rolling stock, has been estimated at another \$200 million. Twenty-seven railroad stations, including ten large ones, were completely destroyed or seriously damaged. Direct rail communication between the north and the south of the Netherlands was completely disrupted. The Germans also broke up and removed 438 miles of railroad lines, looted over half of the railway locomotives, three-fourths of the passenger cars, and about 97 per cent of the freight cars. Machine shops and warehouses were so thoroughly looted that their capacity is almost entirely lost. All electrically operated rolling stock was taken by the Germans, including all overhead gear. The job of restoring transportation is probably the most serious of any industry.

Agriculture: Belgium

The Low Countries are ordinarily food importing nations, on net balance.

Belgium normally imports from 65 to 75 per cent of its agricultural consumption. While Belgian farming is highly concentrated and intensified, it is limited, with only 17 per cent of its population engaged in agriculture. In 1938, 60 per cent of its total area was classified as farmland. Of this area only a half is naturally fertile. These percentages are lower than those for any other country in northwestern Europe. Many specialized crops involving high capital investment and labor per unit of output are found both in Belgium and the Netherlands. Belgium is famous for large areas in which flowers and grapes for the luxury trade are grown under glass.

With the progress of the war, the usually abundant supply of fertilizers decreased sharply. However, the total acreage under cultivation remained approximately the same. As compared with the 1,907,000 hectares under cultivation in 1929, 1,765,000 hectares were cultivated in 1943. During the war, the Belgians made a marked shift to production for direct human consumption, cutting production of cattle feed from one-third of the total acreage to 7 per cent, and increasing crops for human consumption from 11 per cent to 35 per cent of the total.

The reduction in Belgian herds which one might have expected from this shift was avoided, in part, through grain imports from Hungary and southwest Europe. Poultry numbers were reduced by nine-tenths, and hogs by half, while cattle and horse numbers were reduced (by 1943) only about a fifth.

Netherlands' Agriculture

Employing only 20 per cent of the population, agriculture in the Netherlands attained high crop yields and a thriving animal industry through technical efficiency, good organization and specialization. Over a third of its output was exported, providing over one-fifth of total exports. Production was concentrated on livestock, dairy, and market gardening and on horticulture. Farm and horticultural land in 1938 was 5,820,000 acres or over 70 per cent of the total area. This resulted from the century-old reclamation work and from the intensive application of labor and capital. Despite emphasis on stock raising and cereal growing, however, the Netherlands were never self-sufficient in food or feed because of the shortage of land.

Holland's agricultural resources were severely hit by the war, especially by the flooding of 500,000 acres of the most fertile farmland. Areas that were flooded with fresh water may be restored fairly quickly. Where salt water flooding occurred, however, it may take years of intensive effort to restore the land to the previous level of productivity. It has been estimated that the deflooding and refertilizing process alone will cost more than \$14 million.

Much agricultural equipment was destroyed. For example, in thirty-three state-owned farms in the Wieringermeer polder, at least \$3 million worth of agricultural instruments were ruined, exclusive of damage to land, homes, barns and other structures.

Much livestock was lost—300,000 head of cattle alone are said to have been stolen by the Germans.

To achieve prewar levels of agricultural output, fertilizer, cattle feed, agricultural machinery and transportation equipment are needed, in addition to soil reclamation. Pending this, the Low Countries must import food in amounts which limit the funds and shipping space available for needed industrial raw material imports. The decline of agricultural productivity at a time when industrial exports to pay for imported food are also lacking, places the Low Countries in a grave position.

V. The Outlook for the Low Countries

The outlook for a rapid and complete recovery is not favorable. The history of the Low Countries, however, and the remarkable economic position achieved in the past suggest that they may be more successful than can be reasonably anticipated at present. The Dutch founded a great colonial empire and made Amsterdam a world financial center. They played a leading role in the international control of commodities. They also did an outstanding job of agricultural drainage and reclamation. The Belgians have a less striking but equally impressive record, reflected in their position in the

steel and chemical industries, their large investments abroad, and the position of Antwerp as the leading port on the continent.

Other than this somewhat intangible ability to achieve more than might be expected under difficult conditions, the recovery of the Low Countries will depend on their success in obtaining foreign credits, in establishing the proposed customs union in Western Europe, and in taking advantage of certain other possibilities which will be discussed below.

(a) A large share of their current economic difficulties is related to the elimination of Germany as a leading supplier and customer. Developments, however, may be less injurious if Belgium and the Netherlands obtain heavy reparations from Germany for losses in livestock, rolling stock and shipping. The Dutch, it is reported, will ask for \$8 billion in reparations, exclusive of the restitution of \$500 million worth of looted property. There is also much discussion of annexing adjacent land to give Holland more room for the production of food. Some Dutch spokesmen have proposed that 6,000 square miles of German territory be ceded. Labor by German prisoners of war may also contribute. It seems unlikely, however, that German reparations can ever repay more than a very small fraction of the damage done, and the Low Countries' share will be correspondingly negligible.

The loss of the German market may be mitigated for the Low Countries by the industrial development and the creation of markets in the economically backward areas of the world. Belgian and Dutch producers may also be able to take over some of Germany's former customers, with the chemical and metallurgical industries best able to take advantage of the shift. A strict policy for Japan could also help increased quantities of Dutch textiles flow to the Netherlands East Indies in place of Japanese textiles.

Unfortunately, the prospects of a very tough reparations and de-industrialization policy for Japan or Germany are not too favorable. At present, movements of goods from Germany are going primarily to the East. Furthermore, for those articles which are going to Holland and Belgium—such as coal, and pit props—dollar payments will have to be made. This extremely illogical situation is presumably the result of the decision of the Allied Control Council that dollars will be needed to finance necessary German imports.

A policy for Japan which would assist Dutch textile exports assumes that the U.S. will refrain from selling cotton to Japan—probably a very unreasonable assumption—and also assumes that the U.S. and Britain will not themselves attempt to capture the share of world trade relinquished by the Japanese. This same question, of course, also holds for the German situation.

(b) Foreign credits provide the immediate key to the recovery of Belgium and the Netherlands. The goods and services which such credits will

provide are vitally needed to supplement the other measures taken to stop inflation and to start work in the export industries.

The Low Countries are not interested in having foreigners invest within their borders for they do not want foreign capital to participate in the control of domestic industries. This attitude is not new, and prior to the war U.S. investments in Holland were reported at only \$20,000,000. The credits which are sought in the United States are wanted on the governmental level for general purchases, to be repaid later out of general funds. The exchange controls facilitate such policies.

There is every reason to believe that these credits will be forthcoming and that the current financial hindrances on necessary purchases abroad will be removed. To the extent that credits are inadequate or delayed, recovery will, of course, be hampered.

Holland has negotiated loans both from private banks in the United States and from the Export-Import Bank. Although the sudden termination of Lend-Lease did not permit much in the way of actual deliveries of civilian supplies under Lend-Lease terms, the "3(c) Agreement" between the U.S. and the Netherlands permits a transfer of goods already contracted for on liberal credit terms. The Netherlands will receive over \$85 million on a 30-year payment basis with interest at $2\frac{3}{8}$ per cent. The recent monetary agreement between Great Britain and the Netherlands also provides for a reciprocal arrangement under which the central banks furnish supplies of their currencies up to £5 million. (An actual loan is not needed. The British could provide funds to purchase supplies by unblocking sterling balances.) Holland is also obtaining initial credits of 500 million francs in Belgium, \$25 million in Canada, 200 million francs in France, 75 million kroners in Sweden, and 25 million francs in Switzerland. Other credits are being arranged in the Argentine and in Denmark.

The Netherlands East Indies are an important element in the financial recovery of the Netherlands. That wealthy area has its own gold, dollar and sterling balances and has a great potential earning capacity. The debts which were incurred to finance the acquisition of necessary relief and rehabilitation supplies have been less than the dollar earnings which can be expected from the first full post-war year's commercial exports from the area. If Holland should not regain complete control of the Netherlands East Indies, her chance for economic recovery will be seriously impaired.

Belgium's abnormally large import needs, a major part of which can be satisfied only with dollars, can be met out of present Belgian gold holdings and liquid foreign assets only if these are to be seriously depleted. Earnings of dollars will be a fraction of what will be required in the early post-war years. The Congo is expected to give to Belgium's balance of payments about \$35 million annually, a relatively small amount compared with the

Netherlands East Indies' net active balance accruing to Holland's benefit.

Under the Lend-Lease agreement Belgium will receive only about \$160 million worth of civilian supplies, and cash purchases in the U.S. were not large during the first year after liberation. It is expected that some \$350 to \$400 million will be needed for purchases annually in the two years which follow. Some assistance will come from the Export-Import Bank. With the establishment of the Bretton Woods instrumentalities, further assistance should be forthcoming. Credits from other countries are being made available, but Belgium has preferred to make barter agreements under which it receives credits by being allowed to make delayed deliveries. Such an agreement with Sweden is in operation, while others with Switzerland, Italy, France, Norway and Denmark have been negotiated.

Foreign credits are, of course, not a permanent solution for a nation with an import surplus, just as they cannot be the permanent basis for exports by the lending countries. If the Low Countries are not to suffer a real decline in productive capacity and standards of living, they must eventually sell their goods and services abroad and obtain yields on their foreign investments which will permit an expansion of exports. The Fund and Bank will aid the Low Countries by making exchange available until recovery has progressed sufficiently to obviate the need for such support. It must be emphasized, however, that the credits which can be provided by both the international institutions are limited and that additional credits from the U.S. will, therefore, be necessary.

(c) The present crusading spirit in the U.S. against cartels threatens the continued activity of Dutch and Belgian industries on their prewar basis. No matter how much one may oppose cartels in principle, it should be recognized that the competitive international position of the Low Countries can best recover if some cartel and combine instrumentalities are again utilized. In industries such as steel in which Belgium lacks raw materials and has high costs of production, the cartel assures its markets without adding competitive merchandising costs. Similarly, without the cartel Dutch electric bulbs would occupy a less favorable position in certain markets. In other fields, however, as in the case of Belgian glass, production can be efficient enough to maintain domestic and foreign markets without cartel arrangements.

There are already signs that Dutch and Belgian capital in the Argentine and elsewhere are back at the old game. Phillips extended its empire during the war by operations in the U.S., and Dutch tin interests operate America's Texas City smelter. The Belgian Sugar Trust has begun to operate in Canada.

In the interest of free trade, full employment and a rising standard of living throughout the world, the cartels cannot be defended, but it should

be recognized that without them the recovery of the Low Countries would be more difficult.

(d) Belgium and Luxembourg present the foremost example of a modern customs union, although under the Nazis Luxembourg became part of the Reich and the union went out of existence. In the early period following liberation the efforts of UNRRA, seeking an initial foothold in North-western Europe, and the temporary failure of the Belgians to remember their obligation to share imports with the Grand Duchy, strained the union. Furthermore, the absence of a closed border with France made it impossible for several months for the union to work successfully. However, the union between Belgium and Luxembourg is now again functioning successfully.

During the occupation of the Low Countries, their governments-in-exile entered into currency agreements with France and the United Kingdom providing for mutual trade credits as well as economic consultation with the purpose of furthering international trade. (Their previous effort at a mutual reduction in tariffs, the Ouchy Convention of 1932, was blocked by the authorities of the U.S. and the U.K. in defending their most-favored-nation clauses.) These agreements are now in effect and are facilitating trade between Britain and the Low Countries.

During the occupation, the Netherlands joined the Belgium-Luxembourg customs union and both Belgium-Luxembourg and the Netherlands have agreements with France looking towards France's joining the Low Countries. Postponement of the removal of custom barriers between the two Low Countries, made inevitable by developments following liberation, are still in effect.

A broader customs union between France and the Low Countries in an atmosphere of freer trade in the world, might give these countries a leading position in world trade. If, as is contemplated in the Belgium-Netherlands proposals, the colonial empires are made part of the agreements, and if by annexation, trusteeships, or some other device, the Rhine-Ruhr regions of Germany are made part of this western European economic "empire," the possibilities are impressive. The Low Countries and France, taken with their colonies and the Rhine-Ruhr district, would have a population of more than 200 million people, of which 70 million people would be high-income skilled workers. Such an empire would embrace some of the richest sources of colonial raw materials and the greatest shipping centers, factories and mines of western Europe. The United States, the Soviet Union and the British Empire might each be matched or eventually even surpassed in economic power and resources by such a union.

An even more ambitious union, labeled the Western Association, has been proposed by the influential *London Economist*.³ Under this proposal

³ *The Economist*, June 2, 1945, p. 273.

Britain and Scandinavia are to be joined with the Low Countries and France. Apart from any interest in forming a counter bloc against eastern Europe, these countries are all prepared for positive government action to achieve full employment. All the proposed members of the Western Association are dependent to a high degree on foreign trade, particularly with each other. Two-thirds of the foreign trade of the Association would be with its six members. If the Low Countries, for example, could stabilize their trade with their neighbors, a larger portion of their national income would be stabilized than that of any other countries in the Western Group. The Low Countries would thus have much to gain from such an association.

Unless the opportunities offered by a wider customs union are realized, unlikely though it appears to be at present, the outlook for further post-war industrialization of the Low Countries is not favorable. Today neither Belgium nor Holland, economically speaking, are going concerns. In the next decade the costs of recovery and reconstruction, together with the losses of the war, will make the expansion of production to prewar levels difficult. It may take a good part of ten years to adjust merely to the changes which have taken place east of the Rhine.

The recovery of the Low Countries is closely tied to that of all western Europe; alone their chances are limited.

SUMMARY

The war and the immediate post-war period have severely damaged the basic structure upon which rested the advanced industrial activity of the Low Countries. An important part of the industrial and transportation facilities has been destroyed, the procurement of essential supplies is difficult, important markets have been lost, transit trade has virtually disappeared and financial conditions both domestic and international have deteriorated. The conditions, costs and time needed for recovery impose staggering burdens which will make the adjustment to new world competitive conditions difficult. Yet Belgium and Holland are better off than their neighbor France and progress towards recovery, while slow, has begun. The upheaval resulting from the disruption of the previous close interdependence with the German economy may be compensated for through new production to supply markets formerly dominated by Germany. If the Low Countries and the other nations of western Europe act together for their mutual interest, their recovery will be accelerated. In any event, economic recovery is slowed by many obstacles which will tax the industrial talent of Belgium-Luxembourg and the Netherlands.

CHAPTER VI

THE NORTHERN COUNTRIES (Denmark, Finland, Norway and Sweden)

by ARTHUR LARSON

The recent economic story of the countries of North Europe is characterized by several paradoxes.

Traditionally, the commercial policy of these countries has been in favor of the greatest possible freedom of exchange and trade, since they are all exceptionally dependent on world trade for prosperity, and even for survival. Yet, when we look at their actual course of action, thrust upon them by the exigencies of the post-war world, we find them busily lacing themselves up in an elaborate set of bilateral trade agreements, and studying methods to achieve greater self-sufficiency.

There has been irony too in the effect of the war on Northern solidarity. Before the war, co-operation between the Northern Countries was the watchword, and considerable progress had been made toward the formation of a "Northern Bloc" which would present a united front to the world, but the eccentricities of the impact of the war found these countries ranged all the way from alliance with Germany (Finland), through neutrality (Sweden), to active fighting as one of the United Nations (Norway).

Perhaps the most ironical paradox of all is this: the Northern Countries have always been among the most self-reliant and proud in the world, determined to carve their own destinies by their own exertions and resourcefulness; and yet their fate seems ultimately to rest not so much in their own efforts as in the policies and fortunes of the Great Powers by which they are surrounded.

The basic problems reflected in these paradoxes are largely common to all the Northern Countries, and consequently the first half of this chapter will be devoted to a study of the group as such, although, of course, every generalization cannot apply uniformly to all four countries. The second half will be concerned with the specific situation of each individual country.

I. COMMON PROBLEMS

The basic reason for the traditional free trade policy of the Northern Countries is that, with the exception of the Low Countries, they are more

dependent on foreign trade than any other region in the world. Unlike Belgium, the Netherlands and England, the Scandinavian countries have no important colonies with which to complement and support the economy of the home country. Norway, for example, is literally dependent upon the outside world for most of the necessities of life. It has, in fact, the highest imports per capita of any country except New Zealand.

The resources of the group, although extensive and rich in some fields, are conspicuously deficient in several categories which are indispensable to the maintenance of normal industrial life. The most serious deficiency is coal. With the exception of a small production of less than a half million tons on Spitzbergen Island, and some peat and lignite deposits here and there, there is no coal in the entire area. Almost as serious is the complete absence of petroleum (excepting the small Swedish production from shale), without which the great fishing fleets would be unable to operate. The next most important lack is textile fibers; and other missing items could be enumerated.

Denmark presents the most remarkable picture of all, so far as industrial raw materials are concerned, for she has achieved an advanced stage of industrialization in spite of having no native fuel, metals or other industrial materials, except some non-metallic minerals.

Whether viewed jointly or separately, the northern economies present a picture of specialization rather than versatility. Forest products (excepting Denmark), fish, dairy products (in Denmark), certain metals and minerals and their products, and merchant shipping account for the great bulk of their income. Their manufactures are typically of a special character or quality. Thus, we think of Sweden as a producer of special high carbon steels and high grade steel manufactures rather than of bulk iron and steel products. Similarly, Danish food manufactures are designed to sell in the highest price lines, as are also Danish silver, porcelain and so forth. This is due partly to the fact that these countries do not have enough natural resources to prosper merely by selling the riches with which nature has endowed them, and partly to the fact that, because of lack of coal, they were all late starters in the industrial revolution and had to fit themselves tardily into a competitive world.

All these things, added to the fact that their most desirable and logical customers are not always their most logical suppliers of needed goods, lead to the conclusion that the Northern Countries are, of all nations, the most ill-adapted to prosper in a world of bilateral trade arrangements, import quotas and self-sufficient national units.

Indeed, if reasonably free conditions of trade and exchange could be assured, there would be little cause for worry about the future of these countries. They have managed to make their way before, in the face of world competition, and are confident that they can do it again, if given a fair

chance. The Danes made their place in the food export business not because of the possession of vast natural grazing areas, but purely by intensive application of scientific principles to agriculture and marketing. They have nothing to fear except such artificial barriers as a British Empire preference agreement. The Norwegians won their place in the merchant shipping trade by skill and efficiency in the operation of their vessels, and without a penny of government subsidy. They have nothing to fear except the competition of subsidized fleets and other artificial competitive disadvantages. These countries are not asking anyone's aid in the form of large-scale investment in industrialization or even in the repairing of war damage. Naturally, they intend and expect to push forward the steady process of industrial development that has been in progress for some time, but they envisage no revolutionary alteration in the character of their economies and no far-reaching projects requiring extensive outside assistance. What they want is simply the right to sell their goods and services to the world on their merits.

This being so, how does it happen that their actions have for some time appeared to be inconsistent with their traditional policy? The answer is that, because of the importance of foreign trade to them, the moment currency and trade restrictions are adopted by the larger countries, these small northern countries have the most to lose and must rush into a similar course in self-defense. The danger is that such trade controls may become so firmly entrenched that they will be taken for granted even by those to whom they are most damaging. Indeed, it is noticeable that the recent political shift toward the left in all these countries has produced governments which seem disposed to accept various kinds of public manipulation of trade more readily than their countries' traditional commercial policy would ever have tolerated previously.

If this were actually the best of all possible free trade worlds, we could end the chapter here and leave the Northern Countries to take care of themselves. But an honest and realistic analysis of their position in a world with its restraints and dislocated markets, is more troublesome. Of the countries which were the two pillars of their trade—Germany and Britain—the one is crushed, and the other hard pressed for exchange and exportable commodities. The analysis of how to adapt themselves to this situation falls logically into three parts: first, what can be accomplished within the national boundaries of the individual countries; second, what can be accomplished by the device of a "Northern Bloc"; and third, what will be the relation of these countries to the Great Powers.

A. Internal Adjustments

The loss of normal imports resulting from German occupation and Allied blockade naturally drove the Northern Countries to contrive substi-

tutes of home manufacture wherever possible. A strong conviction is being carried over from the war period that there should be an attempt to round out the pattern of production within each country and eliminate some of the glaring deficiencies, so that each country would be better able to meet such crises as the one just past. All this, of course, has a familiar ring even in the United States, whose resources are as bountiful and varied as the Northern Countries' are limited.

Most of the war inventiveness seems to have been expended upon war-time substitutes of dubious and ephemeral value. In Norway, for example, the acreage under cultivation was increased fifteen per cent—an astonishing accomplishment in a mountainous and rugged country, and one of unquestionably permanent importance. But the attempts to produce home-grown tobacco apparently yielded only a dark and noisome substance which was even more than a Norwegian logger could take. In Sweden, many ingenious ways were found to utilize cellulose fiber for everything from linoleum to fodder, and a few of the products may find their way into post-war markets. But it is difficult to predict a glowing future for a yeast-albumen substance made from wood which serves as a substitute for meat.

On the whole, there have been few home-made substitutes which could possibly survive in public favor in competition with the better and cheaper imported article. After all, who wants wooden pork chops, paper pajamas and fish-skin shoes when he can have the real thing?

Opportunities for Industrial Expansion. Another kind of internal development which is not to be confused with a nationalistic urge to self-sufficiency, is the legitimate and inevitable tendency to carry the processing of the country's own raw materials to an increasingly more advanced stage. Here the Northern Countries have the greatest opportunities for rapid and substantial expansion, since most of their industry has hitherto been characterized by a tendency to stop short of manufacturing the final material or product from the raw material. Anyone glancing at their trade statistics is certain to be struck by the high proportion of ores, concentrates, crude nickel, crude copper and other intermediate products among their exports.

There is no strong reason why this should remain so, in countries with considerable native raw materials, unlimited hydroelectric power, an unusually high degree of education and skill, and a well-established mercantile tradition.

The metal and mineral deposits of the northern countries are of surprising variety. The rich iron ore resources of Sweden are well known, but it is less well known that Norway and Finland also have extensive deposits, since Norway has exported iron largely in the form of ore and concentrates, while Finland's resources have mostly been held in reserve. Nickel and copper appear in Finland, Norway and Sweden; zinc in Norway and Sweden; molybdenum, titanium and many other rare metals in Norway;

sulphide ores in Finland and Sweden, containing silver, gold and other minerals; vast quantities of pyrites in Norway; and lead, recently discovered in Sweden. In addition, there are non-metallic minerals too numerous to mention.

Wood Products. Recent discoveries in the techniques of stabilizing, hardening and preserving wood may usher in an era in which stabilized wood and wood-plastic combinations may take their place beside the metals as basic engineering materials. It is now practical to pressure-treat softwoods of the kind prevalent in the Northern Countries in such a way as to make them as hard as ebony and as stable as steel. Pine and spruce lumber become materials which can be machined to the finest tolerances, with no possibility of swelling, shrinking, twisting or performing any of the other tricks which in the past have handicapped wood as in industrial material. Impregnated and compressed and plastic-coated plywoods of many different kinds can now be made, all designed to achieve durability, workability and strength beyond anything previously thought possible. Plywoods are in production which seem to be impervious to almost anything short of atomic explosives, which can be molded to any shape, and which can be permanently decorated with any kind of color, pattern, or finish including wall-paper patterns.

Hydroelectricity. The other major industrial resource, which to some extent offsets the deficiency of coal and petroleum, is the abundant supply of water power in the great waterfalls and countless rapids with which these countries are so generously provided.

The following table will give some idea of the relative position of the Northern Countries so far as undeveloped power resources are concerned:

POTENTIAL AND DEVELOPED WATER POWER (1933)

	Economically utilisable potential water power Millions of KW	Installed capacities of water-wheels in existing plants Millions of KW
<i>Norway</i>	12.1	1.9
<i>France</i>	7.9	2.8
<i>Sweden</i>	6.5	1.4
<i>Italy</i>	5.9	3.8
<i>Germany</i>	3.5	2.3
<i>Switzerland</i>	3.3	1.9
<i>Finland</i>	1.9	0.3

While Denmark is not a producer of hydroelectric power, she is within transmission range of Swedish and Norwegian power, and can, therefore, be classed with the others as a potential participant in the benefits of the vast untapped power of the North. Indeed, with improvements in the range and efficiency of power transmission, Norway and Sweden may one day become suppliers of power to many other parts of Europe.

So lavish is the supply of electricity in Norway that even the use of meters for domestic consumers is scorned. An estimate is made of probable consumption, on the basis of the number of outlets and gadgets in the house, and a flat rate is fixed. The habit of turning out the light when you leave the room, which is one of the basic virtues which children must learn elsewhere, is never the theme of parental admonitions in Norway. And yet, as will be seen from the table, Norway still has unused power almost equal to the combined existing capacities of all the other countries listed. The abundance of cheap power in this area may also mean that it might play an important part in the coming era of atomic energy since, for the present at least, a vast amount of power is apparently necessary in the production of fissionable material. In fact, Norway was the site of uncompleted German experiments in this line, and Sweden, according to newspaper reports, is constructing a radioactive "pile" for commercial purposes.

This sketch of the major basic resources of the group in the industrial field gives an indication of the direction which internal development will take: a more intensive and more advanced processing of native materials, utilizing native power on an increasing scale. However, this by no means eliminates the fundamental problem of the extreme dependence of these countries on healthy world trade. It remains to examine the prospects for solution of the problem within the Northern Bloc itself, and in relation to the four large countries with which their fortunes are linked.

B. *The "Northern Bloc"*

The question of whether a "Northern Bloc" exists, or should be promoted, is a frequent and lively topic of discussion within the Northern Countries themselves. The proposals that have been put forward range all the way from actual political unity to the loosest sort of general co-operation and good will.

Before the second World War, there was a concrete program in the hands of the "Delegations for the Promotion of Economic Co-operation Between the Northern Countries," whose members consisted of high cabinet officials. They published regularly a volume called *The Northern Countries In World Economy*, which held these countries forth to the world as an economic unit, consolidating their trade statistics, and stressing the importance of the group as a combined market.

During the war, however, increasing strain was placed upon the ties between the Northern Countries because of their widely varying status in relation to the war. But with the end of hostilities, intensive and widespread discussions have once more sprung up concerning the importance of unity between the Northern Countries, although no one now goes so far as to suggest political amalgamation.

The cohesive forces drawing these countries together are numerous and

powerful. Their historical origins have much in common. Racial, dynastic and language bonds are close. For example, Iceland was settled by the Norwegians, and was affiliated with Denmark politically before becoming independent. The Crown Princess of Norway is a Swedish princess, and the King of Norway was a Danish Prince. Political connections between these countries in different combinations appear and reappear throughout the pages of their common history. Thus, for several centuries there was a political union between Norway and Denmark, ending in 1814; and from 1814 to 1905 Sweden and Norway shared a common Crown, although they were otherwise largely independent.

Recently, although the countries have been politically independent, there has nevertheless been joint legislation and co-operation on such subjects as money, customs, freight rates, social welfare, shipping regulations, postal service, telegraph and trade policies, as well as close ties between industrial and professional associations, government bodies, trade unions and banks. They have much in common in the realm of political ideals and institutions, and, as indicated earlier, in the character of their basic economic positions and problems.

As against these cohesive forces, there is no denying the existence of certain disjunctive forces, some markedly aggravated by the war. The northern group stands at the crossroads between Russia, Germany, England and the United States, and the pull of these powers exercises a sort of centrifugal effect. There has appeared a body of opinion which holds that the salvation of the Northern Countries lies, not in their banding together, but in their casting their lot with one or the other of the powerful states. This tendency has been furthered by the strains resulting from the extreme difference in the impact of the war on the individual countries. Norway chose to resist the invaders from the outset and carried on a war within the homeland for a number of months, which cost her heavily in lives and destruction. After the King and Government escaped to England, Norway carried on as one of the United Nations, contributing her large merchant marine, her air force, army and navy to the struggle. The homeland continued to suffer deprivation and brutality, culminating in the complete scorching of the entire north Norway area. Denmark attempted for a time to continue its government under the occupation, but presently gave up the attempt, with the King declaring himself a prisoner. Of all the occupied countries, Denmark suffered the least. A heroic underground war was carried on by its patriots, and Denmark during the closing days of the San Francisco Conference, was admitted to membership in the United Nations. Sweden remained neutral, and by comparison with the others suffered very little. Great bitterness arose out of the trade which flourished between Sweden and Germany, providing Germany with large quantities of critical materials throughout most of the war. Since the end of the war in Europe, the

Swedes have had an opportunity to present their side of the story in a way which was not possible earlier, and the effect has been to remove some of the resentment that previously existed. This tendency has been strengthened by the very generous and effective relief activities which Sweden has conducted to relieve the most acute cases of distress in Norway as well as in other liberated areas. Finland was at war with England and Russia, although the United States went no further than to break off diplomatic relations, which were resumed at the end of August 1945.

One of the principal practical objectives which has been urged for the formation of a northern economic bloc has been to offset the disadvantages of small individual countries as against large diversified countries in the negotiation of reciprocal trade arrangements. Without such co-operation, these little countries feel that they are apt to be "pushed around" and played off against each other, but when acting in concert, they are able to present the aspect of at least a medium-sized power representing a combined market of great importance. Indeed, during the nineteen-thirties, concrete benefits of this kind were actually obtained as a result of the close understanding which had been achieved.

Another practical type of achievement was the kind of arrangement represented by the Oslo Convention of 1930. This agreement, which included the Low Countries as well, pledged the signatory nations to give notice to each other well in advance of any proposed change in customs rates and assured an opportunity for discussion of the change by all parties before it was made. In 1938 this provision was extended to changes in quantitative foreign trade restrictions. This did not, of course, in itself prevent a country from making such changes, but it did provide the groundwork for understanding and co-operation, and did prevent surprise moves by individual countries for which the others were unable to prepare.

However, even if the impulse to solidarity should survive the impact of the war and again reach a point as high as it did at the time of the Oslo Convention (which is unlikely for some time), this would not go far toward solving the fundamental trade problem of the Northern Countries. It is true that the immediate post-war period has shown how readily and eagerly these countries rush to each other's aid in a time of mutual misfortune. Their resources of food, clothing, reconstruction materials, capital and productive capacity are offered first to their northern neighbors. But at best this involves only a small fraction of their business; the long-term problem is that of adjustment to the new positions of Britain, Germany, Russia and the United States.

C. Relation to the Great Powers

The Northern Countries and Germany. While the Northern Countries have never had much love for Germany, the exigencies of geography have

always required that an important fraction of their commerce should be with Germany. Before the war, Sweden obtained about one-fourth of her imports from Germany, and about one-fifth of her exports went there, and Denmark's figures were roughly similar. In the case of Norway, Germany's trade accounted for about one-sixth of the total of imports and exports. During the occupation, of course, the entire pattern of the industry and commerce of the northern group was rearranged to complement that of Germany. The lasting effects of five years of this kind of distortion are one of the most serious post-war problems faced in this area. Industries were created or destroyed, agriculture and transportation were manipulated, without any reference to the post-war effect with Germany no longer the center. The financial depredations of the Germans have left a chaotic condition which may take years to unscramble. The total drawings of the Germans out of the Bank of Norway to finance their activities equal about two and one-half billion dollars, which is four times the annual national income of the country, and seventeen times the amount of the average peacetime budget. Direct war damage to Norway was estimated at almost 400 million dollars, and indirect damage at 2 billion dollars. These losses constituted simply a bleeding of existing resources. In the case of Denmark, Germany owes six hundred million dollars on trade balance, and about a billion dollars on the "Wehrmacht Account." These countries, therefore, have an important stake in reparations discussions. Norway presented a bill for four billion dollars to the Allied Reparations Commission. They would like, of course, to be repaid in raw materials and supplies. (Norway asks for payment in ships, floating whaling factories, coal and coke, steel and other raw materials.) They probably do not want or expect any large-scale migration of industrial plant or equipment from Germany. Neither do they want—except on a short-term basis or for special tasks such as clearing mine fields—any German labor, since their labor unions feel that, after the initial post-war labor holiday, the real problem will probably be unemployment for want of raw materials, rather than labor shortage. In short, the Norwegians and Danes would like nothing better than to throw the Germans out once and for all and never see a German again.

However, there is every reason to believe that Germany will not for a time be able to contribute much of importance in the way of supplies to Norway and Denmark, what with all the other claimants making similar demands, and what with the extremely disappointing level of coal and other production within Germany.

The Northern Countries and Great Britain. As far as the Northern Countries as a whole are concerned, Great Britain was before the war the largest single trade factor. In addition to this large trade in complementary products, there are close ties of blood, political thought and mutual interest.

In Denmark, and to a lesser degree in Norway, there is a powerful segment of opinion which favors retaining the closest possible ties with Britain at all costs, on the theory that this is the way things have been in the past, and therefore, the only safe course for the future. An increasingly important body of opinion, however, favors a more independent and diversified approach to the trade problem. Britain is, at least temporarily, unable to supply the goods which were the foundation of her trade with the Northern Countries. The principal export of Britain to Scandinavia has always been coal. Britain cannot produce enough coal to take care of export requirements during the critical post-war period when trade channels are being re-formed. Poland, and perhaps eventually Germany, may supply more coal to this region. Before the war, Britain exacted agreements from the Scandinavian countries to buy a high proportion of their coal from Britain as a price of continued sale of goods to Britain. Denmark, for example, had to agree to take 80 per cent of her coal requirements from England, as a condition of England's further purchase of Danish foodstuffs. Finally, the increasing development of hydroelectric power is certain to reduce the dependence of these countries on England for coal. Sweden increased her production of electricity 36 per cent between 1939 and 1944. Although Norway increased only 8 per cent, the completion of construction work begun during the war will result in an over-all increase of 25 per cent in the hydroelectric capacity. To eliminate all need of coal for industry and domestic heating, Norway would have to increase her prewar capacity only by 100 per cent. With the current increase of 25 per cent, mostly during the war, an increase of 100 per cent does not seem remote or impossible.

Second in importance to coal have been textile materials and manufactures. Here again the same factors are present: supply difficulties in Britain, severe competition and the development of staple fiber products which will reduce demand.

It seems, then, that as a result of all these circumstances, the gap left by the collapse of Germany will not be completely filled by Great Britain, but that, on the contrary, it may actually be difficult to maintain the amount of trade with Britain at the old level.

The Northern Countries and the U.S.S.R. The importance of the U.S.S.R. to each of the Northern Countries is in direct proportion to the particular country's proximity to the Soviet Union. To Finland, the U.S.S.R. is, of course, of overwhelming importance. Sweden, which now faces the U.S.S.R. across the Baltic Sea, is the next most vitally interested. Norway and Denmark are a little farther away, but both have had Russian forces occupying a portion of their territory—East Finmark in the case of Norway and the island of Bornholm in the case of Denmark.

In the past, the closer one of these countries was to the Soviet Union, the more quarrelsome were their relations. With Finland, of course, there

has been actual war. With Sweden, there has been a great deal of bickering in the newspapers and little in the way of intercourse between the countries. The Russian occupation of the Danish island of Bornholm touched off a series of violent attacks on the U.S.S.R. in the Swedish press, although the Danes themselves took the matter quite calmly. It is astonishing to anyone reading prewar trade statistics to find that the amount of trade between Sweden and the Soviet Union was so small that it almost never appears in any of the official tables. Presumably it was negligible enough to be swallowed up in the heading of "all other countries."

All this, however, is changing markedly and rapidly, and in all the Northern Countries are appearing evidences of an increasing desire to get along with and deal with the Russians. This is the theme of countless pronouncements, editorials, speeches and publications, and with the exception of such outbursts as that occasioned by the Bornholm occupation, any contrary opinion is not vocal. Naturally it is impossible to say how much of this is sincere and how much is an attempt by the Scandinavians and Finns to talk themselves into accepting something which they regard as inevitable. There is no denying the fact that, before the second World War, the Northern Countries were permeated by a universal distrust of the Soviet Union. Wartime developments of various kinds have changed this considerably. Norwegians and Danes have shared prison camps with Russians. The Russians were responsible for the liberation of the first Norwegian territory to be freed, the province of Finmark, and appear to have made a good impression by their conduct during these operations and the occupation which followed. Thousands of Russian prisoners were brought to Norway by the Germans, and the brutish maltreatment of these prisoners by the Germans as well as the sense of kinship in suffering exercised a powerful effect in drawing the Russians and Norwegians closer together.

In addition, the enhanced prestige of the Soviet Union as a result of its heroic war activity has, in the case of the Scandinavian countries as in the case of most other European countries, been reflected in a pronounced political movement toward the left, with the inclusion for the first time of several communists in the coalition governments. At one time, it appeared that Norway was about to lead the way toward fusion of the Communist Party with the Labor Party; but, after a few uneasy weeks, the betrothal was broken as a result of a number of points of difference, most of which seemed to be in the realm of practical details rather than high policy.

These closer political and personal ties with Russia are accompanied, of course, by a substantial increase in commercial ties. It is significant that the echoes of the Bornholm shouting had hardly died away when the Poles announced that they would rather sell their coal to Sweden than to anybody else. Finland, of course, has the largest part of her production tied up in the payment of reparations to Russia. Norway and Denmark are beginning

to move toward trade with Russia on a greatly increased scale. A "Danish-Russian" shipping company has been organized by the Danes which will probably deal principally in lumber. Norwegians have already drawn on supplies from the Soviet Union and are contemplating exporting some fish and other products in that direction. The Swedish loan to the U.S.S.R., and the negotiations for a special Swedish-Russian commercial agreement despite U.S. objections, are further signs of this trend.

However, although this reflects a change from the prewar attitude, there is nothing to indicate that Russia will ever become a major supplier to or customer of the Northern Countries, with the exception of Finland. The basic reason for this lies in the fact that Russian demand for the products of the Northern Countries is limited to a restricted class of goods because of the immense resources at the disposal of the Soviet Union, many of which duplicate the resources of the Northern Countries. At one time, in fact, the Russians actually announced that they were not interested in Swedish goods, but wanted the Swedes to pay for Russian goods with dollars in New York. This condition, plus the fact that the traditional attitude of the Northern Countries toward the U.S.S.R. will persist beneath the surface of things for a long time to come, will probably mean that the increase in Russian trade will not be sufficient to solve the Northern Countries' problem of finding suppliers and markets.

The Northern Countries and the United States. Except for Sweden, the Northern Countries have never found in the United States a major consumer or supplier. In 1937 the United States' share of imports into the Northern Countries was as follows: Finland 6 per cent, Denmark 4½ per cent, Norway 7 per cent and Sweden 14 per cent. In 1927, which was probably a more significant year, the United States' share was somewhat higher, but averaged, with the exception of Sweden, not much over 10 per cent. This is usually attributed to the similarity between the products which each country has for export, although too little stress has probably been placed on the failure of both sides to appreciate and develop business potentialities.

From the point of view of the United States, this is only a small part of a much larger problem: the basic necessity of buying the goods and services of other countries even when the United States is convinced that it could just as well produce them at home. For example, if the United States reasons that it now has more than enough merchant shipping to carry all its own goods, and that, therefore, we should not buy the services of the Norwegian merchant marine, this may sound superficially logical; but at the same time the United States would be effectively reducing both trade with Norway and prosperity in Norway, since the proceeds of her merchant shipping pay for over a third of Norway's imports.

When a country is in the dominant economic position in which the United States now finds itself, the question of its foreign trade becomes not

so much one of seeking out products to buy which it cannot possibly produce itself, but rather of fostering and stimulating healthy economic development in countries which are potential consumers of goods which they themselves cannot produce at all, or at least for many years to come. The stake of the United States in the Northern Countries is particularly strong in this respect, since they represent a nucleus of advanced, enlightened and progressive democratic thought which it is to the interest of the United States to encourage. They are in the vanguard of orderly democratic development, and incalculable damage would be done to the cause of democracy throughout the world if this democratic development were damaged or defeated because the United States omitted to do its part in ensuring the prosperity which is the necessary foundation for continued successful democratic government anywhere.

In the immediate reconstruction period, a very high proportion of the goods and materials needed by these countries must necessarily come from the United States because of the breakdown of other supply sources. Thus the channels for a thriving trade will be established, but whether they will be maintained will depend largely on the import policy of the United States in the years to come.

D. *Summary*

The vacuum left by the downfall of Germany cannot easily be filled. Certainly there is no single country which will take its place. The deficiency will probably have to be made up by a more diversified trade throughout the world, with the United States and the Soviet Union playing a substantially greater part than they have in the past. In addition, more intensive trade between the Northern Countries themselves and a determined move toward greater self-sufficiency within each of the countries may be expected.

II. POSITION OF INDIVIDUAL COUNTRIES

A. *Denmark*

Denmark is usually thought of primarily as a rich source of dairy and other food products, and this is an accurate impression, so far as its export trade is concerned. However, it is not generally known that the value of industrial production forged past the value of agricultural production shortly before the outbreak of the war. This marks an important milestone in a process of gradual industrialization which has been going on for a long time.

Denmark furnishes an interesting illustration of an economy which seems to be deliberately planned and adjusted in order to produce a preconceived standard of living. Denmark was not always a dairy country. During the period of the decline of the Hanseatic League, Denmark became the leading trading and shipping country of the Baltic, and remained

so until the loss of her navy and merchant fleet during the Napoleonic wars. In the nineteenth century, the Danes turned their efforts to the raising of cereal grains, and reached a peak export of three hundred thousand tons in the middle sixties. About that time two things happened: the great grain-raising areas of America opened up, and the availability of cheap ocean transport brought the grain within easy range of Europe. Most European countries reacted by setting up barriers against the cheap grain. The Danes, however, gave one of the neatest exhibitions of fast economic footwork in history. Instead of barring the grain, they welcomed it, and almost overnight transformed their agriculture from a cereal-growing to a high-quality dairy system. The rapidity of the change-over can be seen from the fact that Denmark went from an export of two or three hundred thousand tons of grain in about 1870 to an import of ninety thousand tons in 1885. The Danes then proceeded to produce foodstuffs, not in direct competition with the great bulk of cheap products, but in the relatively high-price quality line of dairy and hog products; and they have offset the disadvantages of their small area by carrying the application of scientific principles of farming and feeding to the highest point it has reached anywhere in the world. The Danish farmer, unlike many of his counterparts in the United States or almost anywhere else, does not view the efforts of agricultural colleges and research stations with mingled suspicion and contempt; instead he works in complete co-operation with them, and the results are clearly observable in his production records.

More recently, there seems to have arisen a feeling that the Danish standard of living cannot be maintained indefinitely on this basis, particularly with the competition of empire dairy products in the British home market. Accordingly, a systematic program of industrialization has been undertaken. The pattern is a simple one; first to import parts for assembly, then to make more and more of the parts, and finally to process the raw material. For example, assembly plants for automobile and other machinery are first set up, then some of the parts are made locally, and finally we find a steel plant beginning to supply a portion of the steel requirements.

However, no matter what strides in the field of industrial products for home consumption are made, dairy products will undoubtedly continue to constitute the great bulk of the Danish export trade for some time to come, and the development of this industry is by no means being neglected. The German occupation left no lasting damage on the Danish agricultural economy. The herds of cattle are substantially intact, and, while the number of pigs was reduced about one-third for want of feed, pigs, as everyone knows, come back very fast. As for the soil, there may have been some damage as a result of an acute wartime shortage of phosphatic fertilizers and some erosion of land due to the digging of fortifications, but the damage is not nearly as great as had been feared.

The Danish problem is not to be sought in the field of production but in the field of marketing. The Danes have announced that they do not contemplate subsidizing the export of foodstuffs but plan rather to fit their production to the export market, and to co-ordinate their imports of feedstuffs with their exports of dairy products. Under the scientific methods employed in Denmark, the matter of feeding is reduced to a mathematical equation. Given the price of the finished export dairy product, the price of imported feedstuffs, and the carefully calculated tables on the rate of accretion of meat and milk for each additional pound of feed, each farmer can figure out for himself to a fine point how much feeding stuffs to buy and how much meat and dairy products to sell for export, in order to achieve the maximum profit.

Danish leaders do not expect a complete restoration of the dominant position of the United Kingdom in their export market, but they do expect that the United Kingdom will continue to be the largest single purchaser of their export foodstuffs. Further markets for Danish foodstuffs will depend on the development of a higher standard of living among the various potential importers, since Danish butter, cheese, meat, eggs, etc., as has already been mentioned, are somewhat higher than the world average in both quality and price.

It would be unfair and misleading to say that Denmark has not suffered on account of the war and the occupation, but it is fair to say that Denmark suffered less than any of the occupied countries, due largely to the fact that it is a food surplus area. It sustained some war damage as a result of bombing and sabotage, principally in the railway system. Its merchant marine, which was large in proportion to the size of the country, was very badly depleted by confiscation and sinkings during the war. Otherwise, however, the agricultural and industrial structure of the country is sound and intact, and ready to play its part in the world of post-war trade.

B. Finland

The problem of reparations overshadows all other problems so far as Finland is concerned. The terms of the reparations agreement call for payment to Russia of about 300,000,000 dollars spread over six years in equal parts. There is a further stipulation that about 175 million dollars of this shall be in the form of machinery, ships, and other metal manufactures, while 125 million dollars shall be in the form of forest products. It can be seen at once that this proportion between metal manufactures and wood products does not fit Finland's normal production pattern, in which forest products ordinarily constitute by far the largest part. The question arises how Finland is to manage the payment in terms of metal manufactures. Two courses seem possible: either to build up the necessary plant capacity to manufacture these goods in Finland, or to try to sell enough forest prod-

ucts to western countries to enable Finland to buy the metal manufactures and hand them over to Russia. The former course has one serious danger, which is the prospect that Finland would be left at the end of the six years with considerable plant capacity designed to produce for an artificial reparations-created market, which has nothing to take its place once the reparations are paid. The second course therefore appears to be the more prudent. At one time it was estimated that Finland might have 300,000 tons of paper and 500,000 tons of cellulose for export to countries other than Russia. If sold at United States prices, this would fetch about 45 million dollars. Consequently Finland could theoretically manage to buy the 29 million dollars worth annually of metal goods called for by its indemnity agreement, although this leaves a relatively small balance for purchase of essential imports of coal, food, textile fibers, etc.

The outlook for Finland is darkened by the overhanging shadow of reparations, but the Finns are going forward with the full intention of paying off the indemnity according to the terms of the agreement. Apart from the territorial concessions made to Russia, war damage and destruction in Finland were not generally heavy. The Germans were responsible for damage to the extent of about twenty million dollars as a result of scorching north Finland in the course of their retreat. Perhaps ten thousand rural houses have been destroyed, but the damage to industry has not been serious. Of course, the real war loss to Finland was the property and industries located in the Karelian territory ceded to Russia, which represents about four hundred million dollars worth of forests, industrial plants, railways, communications and buildings.

The progress of reparations payments to date indicates that the Finns will probably be successful in meeting their obligation under the agreement. Although the trade of Finland is almost entirely dictated by the necessity of paying reparations, there remains the fundamental fact that Finland possesses the most promising undeveloped stands of timber of any of the Northern Countries, as well as substantial mineral deposits. Finland is at an earlier stage of industrial development than Norway, Sweden or Denmark, and relies more heavily on the sale of its natural resources than of its skills and services. However, it is possible to observe the same process in Finland that has gone on earlier, first in Norway, and then Sweden, under which the processing of the natural wealth of the forest is carried to a higher and higher point as the forests recede and the need for conservation increases.

One inevitable question will be whether the United States should lend money to Finland to assist her in paying her reparations. The principle of lending money for reparations is a debatable one, in view of the precedent of the Dawes Loans. One view is that lending money to Finland under these circumstances is equivalent to a disguised lend-lease to Russia. On the

other hand, however, it is possible to argue that Finland is a basically sound and potentially prosperous country and that the presence of a reparation debt should not be an obstacle to a loan if the loan is otherwise a sound business proposition.

In any case, once the reparations debt is discharged, there is no reason why Finland should not embark on a period of growth and prosperity.

C. Norway

Of all the Northern Countries Norway entered the post-war race with the greatest handicaps. The actual war damage was by far the greatest of any of the Northern Countries. About 20 large sawmills as well as numerous small woodworking plants were destroyed. Two of the largest sulphuric acid factories were put out of commission. The largest electrical equipment factory was ruined. A storage battery plant was completely destroyed. Norway's only oil refinery was bombed thoroughly in the last days of the war. Nitrate plants, aluminum plants, carbon plants, power plants, harbor installations, shipyards and railroad equipment have been extensively damaged. The entire northern part of Norway was practically burned to the ground, including many herring oil factories, fish processing plants, etc.

By far the most serious loss, however, was the depletion of the merchant marine. Before the war Norway had the second-largest ocean-going fleet in the world. It accounted for 10 per cent of the nation's income and paid for 36 per cent of all Norwegian imports. It is not difficult to see what the loss of one-half of this tonnage means to Norway. Earlier in the war, the United States made an agreement with Norway containing a rather vague commitment to assist in the restoration of the Norwegian merchant fleet. The extent to which the United States carries out this commitment will have a strong bearing on the future prosperity of Norway.

The Norwegian fleet is mostly in the hands of small companies or firms owning perhaps one or two ships, which represent the entire fortune of a man or a family. The Norwegians built their fleet to its prewar position solely through efficient operation, and for this reason, the mere selling to Norway of some of the excess Liberty ships is not necessarily a satisfactory solution, since the Norwegian talent lies in the operation of fast tankers, refrigerated ships, and other new and specialized vessels. Of course, since the largest part of the cost of operating a ship is the capital invested, it is theoretically possible to operate an inefficient ship competitively if the initial price is sufficiently low. The inclination of the Norwegian shipowners seems rather to favor the purchasing of new ships of the kind with which they have always been able to meet competition successfully. About thirty such ships have been built in Sweden for Norwegian accounts. But there seems to be no intention to hurry into the purchase of new ships at war-inflated prices, or of surplus American ships of questionable operating effi-

ciency. With a similar proportion of ships destroyed, the Norwegian fleet made a successful comeback after the first World War, and can undoubtedly do it again, unless it is smothered by the subsidized operation of surplus American ships or by other nationalistic devices, such as requiring American goods bought with Export-Import Bank loans to be shipped in American-owned ships. Such a requirement could easily be ruinous to a country whose shipping business is its principal source of foreign exchange. If this condition were enforced, Norway would be barred from carrying her own goods bought with such loans back to Norway, and would be cut out of much post-war shipping to other countries whose purchases were financed by the Export-Import Bank. Fortunately the rider on the use of American shipping in the Export-Import Bank's legislation has not been interpreted to cover 100 per cent of the resulting shipments.

Norway's fishing industry offers interesting prospects of development. Her catch of fish before the war was over a million tons a year—the largest in Europe, excluding Russia. The development of fast-freezing techniques means that a large part of this catch, instead of being dried and salted and sold at a low price, could be disposed of as frozen fillets, in a higher price bracket. The Norwegians have a considerable advantage over the fishermen of other countries fishing the northern grounds, in that the Norwegians could rush the fish while still fresh to freezing plants along the coast and thus produce the most desirable product. A development of this kind is not simple, however, since it involves construction of many new freezing plants in addition to those now in operation, the provision of additional fast refrigerated vessels, and the building up of a market for frozen fillets in areas which are not accustomed to them and perhaps have not the facilities for handling them.

Fast-freezing techniques will also be of importance in the disposition of fruits and berries in South Norway, where the extreme shortness of the season has always been a serious handicap to profitable marketing.

As to iron and steel production, Norway had plans in progress before the war to build plants of an initial capacity of about 60,000 tons of steel, later to be increased to 120,000 tons. Electric power from Glomsfjord was to be used. The plans have now been revived and placed in the hands of a special commission, which is thinking in terms of a much greater capacity and even of an export business in steel. Another committee is laying plans for facilities to handle the building and repair of much larger ships than could previously be handled.

The textile industry is also receiving attention. Plans are well under way for a new spinning plant of 1,800 tons of cotton yarn annual capacity, which will reduce imports by a third. Similarly, plans are in progress for general textile production which will also reduce imports by a third of the 1939 figure. In addition, artificial silk production is being greatly increased.

Of Norway's other principal industries, the power, metals and timber industries have already been touched on. It might be added that the effect of the German occupation was not all destructive, since the Germans made strenuous efforts to expand industrial capacity in Norway. These efforts were largely thwarted by patriotic sabotage, but in a few fields, such as aluminum, there may have been a net gain. The Norwegians are, however, fully aware that the United States has an aluminum production capacity of a million tons and Canada of a half-million, and consequently they are not placing too much reliance on the aluminum industry as a post-war source of prosperity. Hydroelectric power capacity has been increased about 175,000 KW, or almost ten per cent; and new construction and enlargements in various stages of completion will add another 300,000 KW. It is noteworthy that, only a couple of months after liberation, Norway was offering to the world a long list of metals and minerals, including ferro-alloys, pyrites, copper, ilmenite, nickel and many others. The availability of forest products for export will probably be delayed for some time because of the extensive need for construction lumber at home to rebuild the damaged and scorched areas, although some grades of pulp have already been offered.

All in all, Norway's situation is infinitely better than anyone dared hope it would be during the closing months of the war, when it was known that Norway's plants and railways had been mined for a grand blow-up in the event of a *Gottterdammerung* finish of the war.

D. Sweden

Sweden is the largest and most prosperous of the Northern Countries, with a per capita income near the British level.

There may have been some over-all economic impoverishment as a result of the war, resulting from increased expenditures upon armaments, loss of shipping, excessive cutting of forests for fuel-wood, etc. But relatively speaking, Sweden emerged from the war period in a favorable position. Even the cutting off of German trade in the closing months of the war proved to be something of a blessing, since it left Sweden with large stocks of pulp, lumber and other products available at the very moment the Allies and liberated areas needed them the most. Sweden's position, moreover, as the "Uncle Shylock" of the North seems to have been strengthened. The financial market toward the end of the war was characterized by extreme liquidity of funds and the accumulation of large reserves by industrial enterprises; and Sweden has been able to extend credits to Norway, Finland and many other countries. In fact, the Anglo-Swedish Monetary Agreement of March 6, 1945, amounts to a virtually unlimited credit to the United Kingdom, although the United Kingdom recognizes in the agreement that it must not make unreasonable demands.

In spite of the fact that industrial investments increased from a prewar average of \$180 millions to an average of \$250 millions during the war, this is mostly accounted for by the erection of factories to produce armaments and substitute goods. The permanent value of these developments is small, since the armament program will naturally be sharply curtailed, and since the cost of production of most of the substitute goods is higher than the cost of the imported article. It is possible that some effort may be made to continue the use of producer gas apparatus, for example, both to avoid a severe shock to the very considerable industry that has grown up around the use of producer gas, and to diminish Sweden's vulnerability as a country entirely dependent on imported petroleum. For similar reasons, attempts may be made to sustain a high production of rayon and cellulose staple fibers.

Some of the more significant wartime developments may be briefly outlined. In the timber industry, the most important change was the increase of fuel-wood production from a normal proportion of fifteen per cent to a wartime peak of fifty per cent of all wood cut for sale. Visitors to Stockholm shortly after the end of the war in Europe found the Swedes well prepared for the anticipated coal shortage: streets seemed like canyons bounded by walls of cordwood.

Several factories have been built to produce charcoal for the steel industry, wood-tar, methanol and other wood products. The huge production of cellulose for fodder, which up to the end of 1943 amounted to 870,000 tons, probably has little post-war importance, but the production of cellulose for rayon manufacture, also enormous, will undoubtedly survive.

As to fuel, there have been fairly successful experiments in the production of motor fuel from peat, and there are several large shale oil factories in operation. There is also some production of coke from peat, and it is claimed that good coke can be produced by this method as cheaply as from coal.

In textiles, the production of hemp and flax has been greatly extended, with four flax-working plants and two hemp plants now in production. Sweden has become self-sufficient in coarse fishing nets, and is beginning to make fine nets as well. Shoemakers' yarn and thread, and sewing thread used to be almost entirely imported, and now can be supplied almost entirely from Swedish plants. Rayon staple fiber and artificial silk yarn are being produced at such low cost and in such good quality that they promise to become an important factor in the world textile market. However, the future of paper binder twine, as well as the innumerable other substitute paper goods, such as paper bandages, mattress-covers, table-cloths, etc., is very dubious.

Many new chemicals and tanning extracts are now being made in Sweden, as well as new kinds of machinery, some synthetic rubber, improved motor ships, and so on.

In some respects, Sweden's problems resemble those of the United States. The extension of loans and credits seems to be the necessary preliminary to trade with her neighbors. She is worried about cutbacks of war-time industries, and about high wage and price levels which are causing trouble in world markets. In addition, Sweden has one special worry: she is still something of an outsider, and is undergoing the symptoms of a sort of guilt complex as a result of her ambiguous role in the war. On the whole, however, there seems to be little cause for this concern, since the world of buying and selling has never been known to be unduly affected by such abstract considerations as this.

III. CONCLUSION

The Northern Countries possess all the essential ingredients of prosperity, and as a group have come through the war with relatively little irreparable damage to their economies. But, as has been repeatedly stressed, they of all countries have the greatest stake in the success of the Bretton Woods' plan and in everything else that would further the unhampered exchange of goods and services. They have put forth their point of view on every possible occasion, including the Economic Conference of Geneva in 1927 and the World Economic Conference in London in 1933, but they are very diffident about the weight of their opinions as small nations. Accordingly, it is to the United States that they look—not so much as a capitalist, although there is some occasion for relatively modest loans, and not so much as an unlimited source of goods, although they do ask for their fair share of still critical goods—but principally as the champion of their cause. They see the United States as the one nation which not only shares their liberal commercial view but also has the power and authority to insist upon the restoration of the kind of world in which these small nations of traders and seafarers can resume their prewar economic and democratic progress, and realize their legitimate destinies.

DEFEATED CENTRAL EUROPE

THE ECONOMIC CONDITION OF GERMANY

by ALBERT LAUTERBACH

The future of the German economy obviously cannot be discussed along the same lines as development projects of other European nations are evaluated. A defeated aggressor nation, whose initial victories were largely due to temporary industrial superiority, inevitably faces severe controls and restrictions designed to promise her neighbors greater security in the future. Especially is this true as long as no complete and final elimination of all aggressive spirit and of the social forces behind it has taken place. It is, therefore, the economic condition of the Reich at the end of the war, rather than opportunities for any early development of its resources, which constitutes the main subject of this study.

Physical Destruction and Industrial Efficiency

Long before the reconquest of the Continent by the Allies a strategic offensive from the air against German industrial centers wrought havoc in such areas as Cologne and the Ruhr, Hamburg, Bremen, Berlin, Munich, Stuttgart, Mannheim-Ludwigshafen, Bitterfeld and Hanover. Later the land offensives from both the east and the west gradually subjected the huge industries of Silesia, the Ruhr, the Saar and other regions, to ground warfare and military occupation. By the time the conquest of Germany was completed every part of that country had been for some time within easy reach of bombers and fighters.

In some cases the physical devastation was complete, but on the whole the lasting effect of wartime damage should not be overrated. In particular, aerial warfare was directed primarily at winning the war quickly. It seldom aimed at or succeeded in permanent elimination of industrial production, even though considerable disruption was caused temporarily. Precision bombing-raids in daylight were directed against specific objectives, such as railroads, aircraft factories, or plants for synthetic gasoline. Even there more damage was often done to buildings than to the machinery. Large parts of other industries, such as power stations or chemicals generally, were little affected directly, even though the disruption of coal transport slowed them down temporarily. Night bombing, which was directed

against areas rather than against specific targets, often resulted in greater damage to residential or business sections than to factories. Such damage, indeed, led in turn to indirect disruption of industrial output as long as repeated attacks prevented a lasting rehabilitation. In addition, some of those cities directly affected by prolonged ground operations, such as Aachen, were almost completely destroyed. Some 300,000 civilians were killed and 780,000 wounded.

However, war destruction alone could not achieve any permanent elimination of Germany as an aggressive industrial power. An investigation of the Senate Subcommittee on War Mobilization (Kilgore Committee) and, especially, the reports of the United States Strategic Bombing Survey showed that while German transportation and synthetic oil output had been hit decisively by Allied bombing, the Reich production of explosives, armored vehicles, and some other war equipment, was far higher in 1944 than it had been two years before. At the time of German surrender many of the coal mines and steel mills of the Ruhr were still working, though on a reduced scale; and it was the approach of Allied ground forces and their occupation policy, which eventually brought the Ruhr industry to a virtual standstill.

Experience teaches how quickly physical reconstruction can be carried out, even in wartime, as long as a basic stock of materials, knowledge and training is preserved. This applies in an even greater degree to a peacetime period, when no new destruction occurs. At first, however, the terrific shortage of housing and public utilities in the cities hampers the restoration of disrupted industrial activities even more than does the damage done to transportation facilities and manufacturing plants. Generally speaking, a rebuilding of cities partly destroyed—or the construction of new centers for industry and commerce where the old ones were damaged beyond repair—is bound to constitute a severe liability for the German economy for a long time to come. Altogether 3,600,000 dwelling units, approximately 20 per cent of the total, were destroyed or heavily damaged.

The effects upon industrial efficiency of wartime patterns of Nazi production policy were twofold. For twelve years the general management of German industrial production was based, not on economic or commercial considerations in any customary sense, but on those of preparedness and total war. It is true that the totalitarian State failed to carry its own *Wehrwirtschaft* to the limit until it was too late, and that the Führer's intuition resulted in some critical blunders in the field of production as well as in others. We know now that the German war machine, at the time of its initial victories in 1940 and 1941, was geared only to a brief *Blitzkrieg*, in line with the whole war doctrine of Germany; and that its industrial basis at that time was very narrow in terms of current output. The decisive mistake was apparently made late in 1941, when Russia seemed practically de-

feated. Hitler then ordered cutbacks in war production; and after the Reich Government realized its error of judgment it took German war production almost three more years to reach its peak. Even then the utilization of plants, stockpiles and manpower remained less complete than in other belligerent countries. Moreover, Germany by that time had practically lost the war in the air and on the ground.

In other words, productive capacity continued to grow until late 1944, but at the same time both temporary disturbances and permanent damage from war action had also increased in frequency and scope. Moreover, some types of industrial equipment had been driven recklessly and without adequate replacements. Similarly, civilians used up their stocks of durable and semi-durable consumers' goods and had very limited reserves left at the end of the war.

The use of inferior substitute materials and the shortage of skilled manpower for proper service and maintenance reduced the effectiveness of much industrial equipment. In the last phase of the war all transportation facilities had been driven recklessly. After the downpour of bombs the condition of German railroad transportation in 1945 was far worse than it had been in 1918, when no appreciable warfare on German territory had taken place. At that time depletion of working capital, shortage of housing, and displacement of manpower had left German industry with greatly reduced productivity, despite an increase in physical capacity. Clearly the temporary factors of disturbance in the Second World War, with its concentrated bombing methods, were far more powerful.

After the surrender of the Reich its industry, as a whole, was left in no condition for any smooth reconversion to peacetime production, not to mention preparation for renewed aggression. On the other hand, much of the wartime damage was of a temporary, rather than a permanent nature; and the boasts of German engineers to the effect that they could get most of their industries going within three to eight months, in the hypothetical absence of Allied interference, were given much credit by western experts.

The Legacy of Nazi War Economy

As for the general condition of the German economy as it emerged from the Nazi surrender, the whole structure of the German industry was lopsided. For over a decade a process of new industrialization had taken place in the Reich, though its pace had varied. Toward the end of the war there was, indeed, a tendency toward de-industrialization due to the war effects mentioned, but the industrial capacity of the Reich at the time of surrender still exceeded by far that in 1933. At any rate, many of the factories left at the end of the war had been built in a location which was uneconomical from the viewpoint of peacetime needs, or they had been designed for purely strategic purposes without any commercial justification. This ap-

plied, for instance, to high-cost synthetics plants, even if we should assume more generally that such materials as synthetic gasoline or rubber are not only of technological but of commercial interest for the industrial economy ahead.

The economic organization of industry under the Nazi State left an intricate legacy whose problems far exceeded readjustment of a technological or managerial type only. Under the Nazi war economy, industry was organized in nation-wide groups which were in many respects the consummation of cartels and other monopolistic combinations from the pre-Hitler period. It is true that the big industrialists themselves, as far as they were dependable Nazis, assumed the decisive part in the leadership of these groupings. However, this fact only added to the difficulty of post-war readjustment. With the collapse of the Nazi State its whole organization of German industry for war purposes, as established since 1933, likewise ceased to exist. The uneven and overexpanded structure of industrial concerns geared primarily to aggressive warfare required complete remodeling and partial removal. At the same time, businessmen were slow in developing any new competitive spirit even after the totalitarian state control was gone.

Finally the danger of inflation, after being kept under control for several years, became more serious after the surrender in such areas as Berlin, the scarcity of consumer goods being an important factor. Currency circulation increased, while tax revenues shrank to a mere fraction of their former volume. In October, 1945, taxes on individual and corporate income were raised; but ready purchasing power continued to outdistance national production and the market supply of goods, even after renewed tax increases in February, 1946. The moral effect of a public debt estimated at a minimum of 400 billion marks—not counting reparation and war-damage claims—of which about three-fourths were of a short-term character; the financial disruption in Berlin and some other areas during the early phase of occupation; the issue of mark currency by the occupation authorities, especially in the eastern zone; and the participation of many Germans and some Allied nationals in black markets for goods or foreign exchange, all constituted inflationary factors. On the other hand, such measures as the blocking of about 10 per cent of all bank accounts in the western zones and the virtual standstill of bank activities in the Russian zone helped reduce effective purchasing power and thus had deflationary effects. On the whole the inflation danger remained under far better control in Germany than in some of the liberated countries.

Use of Foreign Manpower

The Reich had used in wartime eight to ten million foreign workers and war prisoners in its industry and agriculture in order to alleviate its critical

shortage of manpower, due in part to inefficient utilization. Not all of them were able to return promptly to their home countries as they were liberated, shortage of transportation being one delaying factor of particular importance. Moreover, up till the time of their final collapse the Nazis had carried out a conscious policy designed to keep the younger and more active elements of these nations out of their habitual environment as long as possible.

As soon as the German military machine broke down, however, millions of foreigners left their factories, farms and camps, and attempted to reach their home countries as quickly as possible. Before this movement was channeled and organized, it greatly complicated the task of the occupation authorities. Its disrupting effect upon German industry coincided with a serious-shortage of non-Nazi managers, engineers, and other specialized personnel. On the other hand, part of the older generation of skilled workers turned out to be anxious to re-establish their free trade-unions and to help eliminate the vestiges of Nazi influence. In some industries such as coal mining the dependence on foreign slave labor had been extensive and the release of foreign workers contributed greatly to the disruption of production for months after Germany's surrender.

Simultaneously with the loss of foreign manpower, a gradual homeward movement of German soldiers from other parts of Europe took place, although the major portion of the beaten armies was at first sent to prisoners' camps and large numbers of Germans were retained in the Soviet Union for reparation labor. Many of those returning home were in poor shape, both physically and psychologically, and could contribute little to the restoration of productive efficiency. The same was true of two to three million German-speaking civilians who were expelled to the Reich from Czechoslovakia, Poland, Austria, Rumania and Hungary. This influx, in its immediate effects, was far more of a burden than an asset. A large part of it consisted of women, children and elderly people; most of the immigrants had no property and no place to go to; and they came to a country which had lost a substantial proportion of both its industries and its farmland, and which had little opportunity for their systematic retraining and resettlement. The Potsdam Declaration stipulated that such transfers should take place "in an orderly and humane manner" and that the immigrants should be equitably distributed among the several zones of occupation, but by that time a substantial influx had already occurred. The total population of the Reich area west of the new Oder-Neisse line is estimated to be only three millions less than that of the pre-1938 Reich.

Agricultural Production

Under the Nazi system agriculture was controlled by the monopolistic state organization of the *Reichsnährstand*, and its output had been quanti-

tatively expanded without much regard to factors of productive efficiency. At the same time, the traditional property structure of German agriculture, with prevalence of big land-ownership in the east and northeast and of family farms in other parts of the country, had on the whole been preserved and only the Russian occupation of the former area brought a distribution of big estates among small peasants. Estates over 100 hectares (247 acres), and all those owned by active Nazis or war criminals, were then pooled in a land fund, from which parcels of ten to twenty acres were formed; a size often inefficient without working co-operative organization, which may follow. The reform in the Russian zone involved about 7,000 estates totaling 4 million acres, which were distributed among some 270,000 small peasants, laborers and refugees against a moderate fee in kind to be paid in three yearly installments.

Before this land reform, however, an uneconomic concentration of German farm production on grains and potatoes, rather than on protective foods, had resulted from prolonged protectionism and it was further accentuated by the Nazi war economy. Certain types of livestock, such as hogs, were considerably reduced as a result of the war. However, white potatoes, vegetables and other crops for direct human consumption were increased during the war so that Germany, in her prewar boundaries, increased the calories for human consumption by 10 per cent.

Foreign labor was employed in wartime by German agriculture in large numbers. Its loss, in addition to the dissolution of the state organization, the rapid exhaustion of the soil under wartime strain, and other factors, contributed to a setback of German food output in 1945. At the same time, wartime nutrition of the German people had been onesided, even though sufficient in quantity on the whole. The post-war reduction of food supply, therefore, found them without any great physical reserve, but still much better off than the various populations which had spent years under the heel of oppressors. At the same time, the loss of the eastern farm region was bound to affect the food supply in the remaining area of Germany as soon as stockpiles there would be exhausted.

The Spoil of Europe

Not only did the Nazi armies and authorities physically remove art objects and many other valuables from the conquered countries; but financial, commercial and industrial concerns from the Reich, as well as government agencies, acquired "legal" property titles to banks and factories in Yugoslavia and Poland, Norway and France, not to forget such satellite countries as Hungary and Rumania. In the Danubian and Balkan countries, in particular, such capital expansion followed up the German prewar policy of economic infiltration through trade. Methods applied during the military occupation varied from commercial purchase to outright confisca-

tion of firms or the impost of huge "occupation costs," depending on what method suited the Nazis best in each case.

As a general policy in the process of restitution, German ownership or participation in business units outside pre-1938 Germany has been suspended or invalidated. In many cases, indeed, it has not been an adequate solution simply to restore the property rights of the former owners, especially if the sale was carried out voluntarily, or if the former owner could not be located. At the end of the war the Dutch government, for instance, took over large parcels of industrial shares and many patents held formerly by German groups.

To mention another complication, certain farm crops and industrial products of Danubian or Balkan countries had for years been adapted to German import needs. Hungary, for instance, had committed herself to reduce her wheat production in favor of increased exports to Germany of oleaginous plants, flax and hemp, though only part of this agreement was carried out. Likewise under German influence, Bulgaria had greatly increased her production of soybeans, flax, hemp, cotton, poultry and fruit. Rumania developed her output of soybeans, sunflowers and other articles. Yugoslavia's production of copper, lead and bauxite had been greatly expanded for purposes of the Nazi war machine.

Long before the war, indeed, Germany's part in the foreign trade of the Balkan nations had been great and for Bulgaria, for instance, it was overwhelming. The combined trade with Germany of Bulgaria, Yugoslavia, Turkey, Greece, Rumania and Hungary amounted in 1938 to 35 per cent of their total imports and 34 per cent of their total exports.¹ All over south-eastern Europe and in some other parts of the Continent new and old industries depended on the German market.

Now this market is gone and the economic policy of many a small country depends in large degree on whether or not it can expect any extensive trade relations with the Reich to redevelop at some future date, under sufficient guarantees against renewed abuse of such relations for aggressive purposes. In the meantime, at any rate, the nations concerned are in need of new sources of supply for machinery, fertilizers, electrical appliances, and so forth; and they also need new markets for their grain, cattle and minerals. They are all anxious to speed up their own industrialization with help either from the western nations or from the Soviet Union, and Germany is very unlikely ever to regain the decisive commercial role which she has had on the Continent in the recent past.

Occupation as an Economic Problem

The military authorities in charge of Germany's occupation have been the first to face some of the economic problems mentioned, and many oth-

¹ League of Nations, *Europe's Trade* (Geneva, 1941), p. 51. In 1928 the percentages had been only 17 for imports and 16 for exports.

version of pasture land to crops, and shipments of cotton from the United States, for instance.

On the other hand, such help has clearly had to watch its step in order to avoid any purely technical standard of efficiency and any unwitting encouragement of renewed production for war. Specifically, while the occupation authorities had to encourage an adequate supply of food, fuel, clothing, shelter, small tools, and similar essentials, they had to be more cautious in reopening German factories outside the field of consumers' necessities. In particular, the occupation authorities were at first exposed to pressure from German industrialists, including Krupp and the I. G. Farben, to help reopen their war plants for needs of the war in Asia, and for a moment it seemed uncertain whether they would manage to avoid a possible trap. In the latter part of 1945, however, the arrest of leading western industrialists, especially those closely identified with the rise of Nazism and its war economy, helped clarify the Allied policy.

The Pattern of Inter-Allied Economic Control

Without going here into all details of the control problem, announced Allied policies² have been based on the following principles:

(1) Frustration of efforts made by the Nazis after 1943, when they realized that their game was lost, to hide abroad industrial assets, research facilities, and specially trained personnel, for another gamble of aggression. This includes measures designed to undo the organized looting of German-occupied countries during the war and the government-supported flight of German capital in anticipation of defeat; a subterfuge which used the liberality of business laws and practices in neutral countries, in particular. In November 1945, the Allies set up an External Property Commission in Berlin, which was designed to secure the co-operation of neutral nations in uncovering German property holdings there. Interestingly, it was reported at the same time that speculators of British and American nationality were buying up German corporate shares on neutral markets.

(2) Elimination of the economic penetration of such areas as Latin America by German-controlled concerns in such fields as chemicals. This also includes the prevention of any use of enterprises, subsidiaries, assets, or old business contacts in neutral or Allied nations for the preparation of future aggression. In some cases elimination involves the substitution of essential services from new sources. The tracking down and disposition of German assets in such countries as Spain or Switzerland has turned out to be a potential source of conflict between Allies and neutrals.

(3) Limitation or elimination of cartels, syndicates, monopolistic com-

² See, in particular, the Potsdam Declaration of August 2, 1945; the statement by Mr. William L. Clayton, Assistant Secretary of State, before the Subcommittee on War Mobilization of the Senate Committee on Military Affairs, on June 25, 1945; and the State Department Statement on Reparations Settlement and Peacetime Economy of Germany, of December 11, 1945.

ers. Their success depends largely on the degree of working co-operation, both economic and political, among the four major powers which participate in the occupation of the Reich. The decisive question, indeed, concerns the general purposes of economic policy toward the occupied Reich. What should at all costs be avoided is a policy which would merely encourage another outburst of German nationalism without doing any real harm to the aggressive potential of the Reich. The Potsdam Declaration, which announced many stern measures against any future aggression from Germany, also stated:

It is not the intention of the Allies to destroy or enslave the German people. It is the intention of the Allies that the German people be given the opportunity to prepare for the eventual reconstruction of their life on a democratic and peaceful basis.

The occupation authorities have had to face certain problems of relief and rehabilitation on almost the same technical lines as did those agencies concerned with help to the victims of Nazi aggression; with the important difference that the moral claim for help has been weaker in the case of the Reich population, while its general wartime condition was considerably better than that of the victimized nations. For example, German nutrition has not led to any widespread starvation as in Greece and the German clothing situation has remained incomparably better than that of the Polish people. It goes without saying that in all cases of shortage those populations which were victims of aggression from Germany deserve unqualified priority. With this reservation, there has yet been need for initial relief for the Reich by organizing repairs of transport, housing, utilities, and the distribution of food, clothing, coal, medical supplies and other essentials, at first from conquered German stocks and some current production and later from Western sources as well.

The problem of whether Germany should receive any additional encouragement for economic rehabilitation has aroused some controversy. Should not the victors utilize their golden opportunity for permanent destruction of German industrial power, rather than help rebuild it? The answer which the Potsdam Declaration indicates is yes and no, depending on the type and purpose of each industry. To begin with, rehabilitation of coal mining and transportation facilities, especially the railroads and Rhine shipping, has been indispensable in the interest of essential distribution of food and fuel, homeward transportation of both foreign labor and German ex-soldiers, and adequate supplies for the occupation forces themselves. By October 1945, 92 per cent of the railroad trackage in the American zone had been restored. Any initial relief, however, is of little use, from the viewpoint of occupation authorities, unless it is replaced before long by supplies from a revived domestic production of all essentials. This is exactly the purpose of rehabilitation, which has included in the American zone con-

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bines, and concentrated bank holdings in German industry and, especially, of their international links. Through such links, especially those of the I. G. Farben combine, the Nazi war machine was enabled to utilize American methods for the output of high-grade oil products, for instance, and to delay the development of synthetic rubber in the United States. "The German economy shall be decentralized for the purpose of eliminating the present excessive concentration of economic power" (Potsdam Declaration). In the fall of 1945, the break-up of the Krupp munitions concern and the whole financial structure of the gigantic I. G. Farben combine got under way, but actual progress has been slow and the bulk of war capacity of the I. G. Farben was still intact at the end of 1945. Early in 1946, however, the Office of Military Government reported that 50 per cent of the major manufacturing plants of the I. G. Farben in the American zone had been either destroyed or assigned for reparations. Even then speculation continued, and stock-exchange dealings in I.G. stocks and bonds were later suspended. An extensive list of other German plants for sale to American purchasers on reparation account was published early in 1946.

(4) Removal of Nazis and their fellow travelers from all influential positions in German business life. Effective action in this direction, however, was scanty until the fall of 1945, when the Division of Cartels and External Assets of the Office of Military Government in the American zone rounded up a number of leading bankers and other business leaders. They were held responsible in large degree for Hitler's rise to power, Germany's economic mobilization for aggressive war, and her looting of conquered nations. The British authorities followed with similar measures in their zone, but action in both areas remained spotty.

(5) After the complete disarmament and demilitarization of the Reich, continued technological controls over research and invention, patent rights, the use of strategic raw materials, and so forth.

(6) Abolition of specific war-essential industries, such as the entire production of aircraft, seagoing ships, ordnance, explosives, and other implements of war; and reduction of the steel and automotive industries. The chemical, machinery, and light-metal industries are to be "rigidly controlled and restricted to Germany's approved post-war peacetime needs." Emphasis will be put on "the development of agriculture and peaceful domestic industries." This latter provision of the Potsdam Declaration can potentially mean very sweeping or very moderate restrictions, depending on its concrete interpretation by the enforcing authorities. Their first steps in this direction aimed at the removal or, in some cases, destruction of plants in such fields as explosives, chemicals, airplane engines, ball-bearings, shipyards and machine tools.

(7) Generally, production is to be geared to goods and services required to meet the needs of the occupying forces and displaced persons, and those

"essential to maintain in Germany average living standards not exceeding the average of the standards of living of European countries," excluding Britain and the Soviet Union. Apparently this means an absolute ceiling which German consumption is not allowed to exceed, even in the remote case that this should become possible from the economic point of view at any early date. This ceiling is apparently to be determined according to the production figures of 1932, the worst year of the depression.

(8) Supervision of the monetary, banking and fiscal system of the Reich, with special attention to anti-inflation and foreign-exchange policies. Such measures have included, for instance, the closing down and seizure of all assets of the *Bank der Deutschen Arbeit* and its numerous branches. At the same time, the circulation of mark currency has been continued in all occupation zones, despite the limitations to economic intercourse between the western and eastern zones in many other respects. The partial de-industrialization mentioned, in so far as it reduces civilian supplies, may have some inflationary effects.

Some of these policies have been controversial among the United Nations, at least in the details of their enforcement. Even where the aim of a measure has been shared by all the Allies, its concrete details have sometimes varied. For example, there has been agreement concerning the permission for German labor to reorganize its free trade-unions; but while the Soviet authorities believe in organizing their leadership from the top down, the Western Allies want them to begin on the local level and gradually to elect their central leadership. France, in particular, has administered her occupation zone in such a way as to isolate it from the others as much as possible.

Moreover, the whole pattern of economic control in the Soviet zone has inevitably differed from control policies in the American, British and French zones. The Russians were quicker in getting those industries going which were not subject to removal, and introduced production planning in both industry and agriculture through the medium of selected German officials. In a number of cases removal of plants was omitted on the condition that they would be socialized. The Potsdam Declaration, it is true, had stated that "Germany shall be treated as a single economic unit," with common policies in the fields of mining and industrial production and allocations; agriculture, forestry and fishing; wages, prices and rationing; import and export program for Germany as a whole; currency and banking, central taxation and customs; reparation and removal of industrial war potential; and transportation and communications. Equitable distribution of essential commodities between the several zones was to be assured by the Control Council; but the lack of co-ordination among them turned out practically to be one of the gravest economic penalties the Reich had to pay. It is clear, at any rate, that economic life in the whole remaining area of the

Reich will continue to be under the dominating impact of foreign supervision for a long time to come, even though a German administrative machinery is designed to work under the Control Council. It is intended to replace the military administration by a civilian corps of administrators based on an expert advisory group.

The Impact of Reparations

There has been far-reaching agreement on the necessity to face the reparation problem more realistically than was the case after 1919. In order to make any really decisive contribution to the gigantic cost of European reconstruction, Germany would have required, first, a high level of domestic production combined with a prolonged cut in her standard of living; second, a current opportunity to sell products for foreign exchange in excess of normal mutual trade, or to deliver goods and services in kind without running afoul of import and employment limitations in the receiving countries. The possibility of a conflict between disarmament and reparation aims was thus obvious, and it was this time decided in favor of disarmament.

During the period immediately following the end of the war, when many European nations suffered desperately from physical shortages of labor, industrial equipment, consumers' goods and almost any other type of article, it has been easy to carry out reparation effectively. Once this period of immediate restitution comes to an end, the scope of actual reparation deliveries is bound to be limited. This is not merely due to a reduction of German output; for the share of war preparation in the recent past was so heavy there that its elimination would theoretically permit both substantial reparations and a standard of living better than it has ever been since 1929. Economic limitations in the claimant nations, as far as their economic system is of the competitive type, are of greater significance. Such nations are able to utilize continuing reparation deliveries, with the exception of some strictly non-competitive types of goods or services in kind, only if and when they have managed to establish lasting full employment; otherwise they will run into the same pitfalls as after the first World War, especially if cyclical fluctuations of business should resume their violent character from the interwar period. This also applies to reparation in form of forced labor. Both in France and in other countries of western Europe organized labor has insisted on very elaborate safeguards designed to prevent any unemployment or wage cuts due to the availability of German prisoners.

The Soviet Union—by far the biggest claimant indeed—is in a different position and so potentially are other nations with fully planned production and trade. They can utilize, for quite a while to come, almost any amount of unilateral deliveries of foreign exchange, products or labor. Such deliveries allow them to transfer part of their own resources to other sectors

of their national production effort, or to relax the strain on their own equipment or labor. In short, reparations, as a rule, constitute a net addition to their resources for production or consumption. It is, therefore, the appearance of the Soviet economy as a huge and receptive claimant which has involved the greatest change compared with the interwar period in Germany's position as reparation debtor. The total bill for damages submitted by the Soviet Government amounted to 679 billion rubles of 1941 purchasing power (about 140 billion dollars at the official rate of exchange).

The Potsdam decisions concerning reparations took these factors into account. They stipulated that German productive capacity not needed for permitted production—presumably on the lines of the 1932 output—should be removed for reparation, or destroyed. The amount of industrial equipment to be removed was to be determined speedily and the removals were to be completed by the end of 1947.

Such removals, and certain external assets of the Reich, were the principal sources of reparation stipulated. The proceeds of exports from current production and stocks were to be available in the first place for the payment for essential imports approved, though plans for reparations from current output were also discussed. On the whole, the Soviet Union and Poland were to obtain reparation from the Russian zone, and the other Allied nations from the western zones of occupation. The latter, however, were to deliver to the U.S.S.R. 15 per cent of their disposable capital equipment in exchange for food and raw materials from that country, and another 10 per cent without compensation. The Soviet Union renounced all claims to gold captured in Germany, but was still expected to receive about half of the total reparation. The smaller claimant nations were to submit data concerning their losses to the Big Three. The Soviet Union was especially interested in the equipment of such concerns as the I. G. Farbenindustrie and the Opel motor works. In allocating later the national quotas for reparations from the three western zones, Britain received a share of 28 per cent, and the United States and France 20 per cent each of the total, with fifteen smaller nations sharing the balance. In the case of the United States, at least, benefits from reparations appear to be trifling compared with the actual costs of occupation, relief and other operations in its zone, not to mention the war itself. France continues to count on substantial coal deliveries from the Ruhr on reparation account for many years ahead.

Mr. Edwin W. Pauley, American chief delegate to the Allied Commission on Reparations, summarized the intent of these arrangements as a policy designed "to spare our own or any other country the necessity of becoming a permanent contributor to the support of the German people. . . . We are not going to rebuild a strong Germany in order to pay reparations. We are giving out no blank checks without knowing what is in the bank."

Remaining Resources of the German Economy

In evaluating the economic condition of Germany after the second World War and in shaping policy decisions for the future, the volume of her remaining resources should not be underrated. In particular, her permanent assets include substantial resources in raw materials, such as huge quantities of coal and potash, and some deposits of metal ores. This remains true even after allowing for territorial losses in important border areas under the draconic provisions of Potsdam which reduce the Reich, compared with the frontiers of 1937, by more than 20 per cent and leave it an area of 137,000 square miles.

Such losses involved the bulk of the food-surplus area in the East, including East Prussia, Silesia, and large parts of Pomerania and Brandenburg. Upper Silesia also represents a major concentration of coal and steel output. It is true that part of the eastern food surplus, especially that of grain, has largely been based on artificial protection through tariffs and subsidies. However, this does not alter the necessity for the remaining areas of Germany to secure food supplies from new sources at home or abroad. The problem is complicated by the fact that most of the nations in southeastern Europe which used to contribute to German food imports, now belong to the economic and political orbit of the Soviet Union. In the West, incorporation of the Saar mines (or that whole territory) into the French economy, and a special international regime for the Ruhr, will mean a temporary or permanent loss to the Reich of its major coal-producing areas and of the bulk of its iron and steel industry. The British authorities, it is true, favor British control and management of the Ruhr industries without detaching the Ruhr from the Reich politically and without precluding later international management of these industries.

All this means, in turn, that both the remaining industries of the Reich and its foreign trade require a complete readjustment. However, neither the Potsdam Declaration nor later statements have brought any cleancut indication of its concrete direction on a nation-wide basis. Theoretically, such readjustment may follow either one of the two following courses:

(a) The non-war industries which the remaining territory of Germany is allowed to retain may provide an exportable surplus of such goods as coal—depending on her future frontier in the West—potash, timber, light manufactured goods and ceramics; a surplus which would have to be of sufficient value to pay for essential import needs in the fields of foodstuffs and raw materials, and of such indispensable services as shipping. It can be assumed that most other items of the German balance of payments, such as capital movements, will be of negligible significance for the time being. This still leaves the question whether such exchange of industrial products, especially consumers' goods, against foodstuffs and raw materials should concentrate on the detached ex-German areas to the east; on other coun-

tries in eastern or southern Europe; or on other nations with agricultural surpluses, especially in the Western Hemisphere. It is not easy, indeed, to imagine a volume of, and foreign market for, the remaining industrial exports of Germany, which would be of sufficient size to pay for constant huge purchases of food, oil, shipping services and other essentials.

(b) As an alternative, Germany may give up the bulk of her industrial establishment, even to the extent that it is not of a directly war-essential character, and may embark upon a policy of reagrarization, which would greatly reduce her needs for import of either foodstuffs or raw materials. This is the essence of the much-discussed Morgenthau Plan. Given the density of her population and the scarcity of good soil, only very intensive, labor-consuming types of soil cultivation, with emphasis on such crops as rye and potatoes, could be considered at all. Germany would then try to secure self-sufficiency in farm production and to cut down to a bare minimum both her industrial production and her imports of all types. Deforestation and the intensive cultivation of what has been in the past military land, gardens or pastures, and the lowering of food standards if necessary, are parts of this program.

However, such a course would seem to be in obvious contradiction to the historical trend toward growing industrialization of the world. At best it would offer opportunities for rural resettlement of 4 or 5 million out of a population of 66 million people, largely with an industrial and commercial background; a population living on a soil of limited fertility which has suffered from long exhaustion and war effects. The potential effects of such a course upon the industrial and agricultural structure of other European nations are too far-reaching to be discussed here. If we add the possible necessity for an agrarianized Germany to produce exportable farm surpluses in order to pay for whatever imports from France or the Low Countries of metalware, transport equipment, etc., may still be required, then the pitfalls of such a policy become sufficiently clear.

Germany's scientific and industrial experience survives at first, including such fields as synthetics. Such experience has undoubtedly eliminated in the recent past some of the traditional dependence of the Reich upon imports of strategic materials; and it will not be immediately annihilated even when all of the plants where it originated are destroyed and if their coal basis is lost. The factors to be considered in restricting synthetic production are, (1) military: undoubtedly independence from imports of such products as oil, rubber and cotton has been of great military importance for the belligerents in the second World War, although their future significance is somewhat less certain; (2) financial: most of the synthetic substitutes have so far been high-cost products, but here again this does not necessarily determine the future trend; (3) commercial: if Germany—even a largely deindustrialized Germany—is compelled to import virtually all of her im-

port needs for oil, rubber, cotton and many other materials, and if she also loses the bulk of her coal resources, then her future balance of payments becomes more and more of a riddle.

Possibly the only realistic answer to some of these questions will be an opportunity for Germany to expand some of her strictly non-war industries, although the number of such fields in a period of total warfare has been shrinking rapidly. Political and commercial opposition on the part of various Allied nations against any such addition to German facilities—not to mention active encouragement of such expansion—may indeed remain vigorous, at least until the average German has given unmistakable evidence of practical repentance and peace-mindedness. Potentially, these possibilities include such industries as textiles, food processing, furniture and paper.

The patience and capacity for diligent work which characterized the German mind in the past may have survived a crushing defeat. However, the German manpower resources have suffered heavily from Nazi policies and the war. Nazi attempts to raise the birthrate were of little consequence compared with the number of soldiers and civilians killed or crippled as a result of war action. The permanent loss among male adults in the working-age group was particularly drastic. In addition, there has been a temporary manpower loss of considerable proportions from the absence of war prisoners and German reparation labor abroad. Finally, the suppression of all independent thought by the totalitarian dictatorship, and the systematic slaughter over a period of twelve years of Jews, democrats, labor leaders and other anti-Nazi groups has greatly drained the German potential of brainpower and enterprise, at least outside the specific field of war technology.

It is true that the reduced Reich has received an influx of expatriated Germans from its eastern neighbors, but this influx has been of dubious economic benefit. Likewise, transitional unemployment, which occurred in many industrial communities even while agriculture and emergency repairs were short of help, was due chiefly to impaired transportation, utilities, housing and raw material supplies, and to the shutdown of munitions plants, without necessarily indicating any genuine surplus of efficient labor, especially of the skilled type.

However, since the Germans have been left an opportunity to survive as a nation—and despite the drastic and vital controls today there would have been no real possibility of any other course for the Allies in the long run—they will undoubtedly attempt to arise once more as an industrial nation within the limits set by the Allies. The inescapable problem, therefore, concerns the concrete purpose toward which their industrial energies are to be directed. If they alone should forcibly be concentrated upon commercial revival while the victors continue to spend much of their own energies on armaments, then Germany might, in fact, find herself in a relatively favor-

able position for peacetime competition at some future date. The history of both Germany and other nations shows how quickly a country with wide productive resources can recover from the economic wounds of war in the course of a period of peace.

This is not the place to discuss in general the problem of how and when Germany can be made a peaceful member of the family of nations, and to what extent the Potsdam settlement represents either economic or political realism. So much is clear from historical experience that no lasting success can be expected unless and until the economic power of the leading groups in the militaristic expansionism of the last century—the Junkers in the East and the monopolistic industry combines in the West—has been permanently broken. Considerable progress in this direction has been made since the surrender of the Reich. In the last resort it is the scope and thoroughness of such social reform which will determine the economic and political role of Germany in future world affairs.

The Outlook for a Civilian Economy

The Morgenthau Plan and other schemes for a drastic curtailment of Germany's economic potential have met objections on the grounds that they would establish a vast rural slum in the heart of Europe. A unanimous report of the Special House Committee on Postwar Economic Policy and Planning, submitted in the fall of 1945, warned against a course which would imply a slow liquidation of 8 or 10 millions of Germans through disease, malnutrition and slow starvation, and which would discourage democratic progress there. It saw the alternatives to permitting such a catastrophe, in either restoring Germany to a minimum subsistence level or in continuing relief at the expense mainly of the United States.

Somewhat later, the Foreign Economic Administration³ came out with a comprehensive program for the economic treatment of Germany; a program which attempted to combine the requirements of effective disarmament with an adequate living standard for the German people and a social reform of lasting nature.

The FEA program covered the military, industrial, scientific, institutional, external-security and reparation aspects of disarmament. In its underlying philosophy, it attempted to eliminate the German industrial capacity to make war, while leaving Germany an opportunity to continue and expand those economic activities which are of a peaceful character. In fact the FEA expected the German standard of living to profit considerably from cutting out all armament activities, and it saw no necessary conflict between the elimination of the war potential and the establishment of a high-level economy.

In its proposals for industrial disarmament, this program envisaged the

³ Foreign Economic Administration, Enemy Branch, Final Report: *A Program for German Economic and Industrial Disarmament*. Washington, December, 1945. (2 vols., mimeographed.)

complete and permanent elimination of certain industries having war potentials, and a specified quantitative restriction of other related production types. The complementary program for scientific disarmament comprised the elimination, licensing, or financial and personnel control of vital facilities for research and testing. The institutional disarmament program was designed to break up any excessive concentration of economic power in the hands of a few individuals or monopolistic groups, including German participation in international cartels; also the complete abolition of the General Staff, the breaking up of the landed estates of the Junkers, and a denazification of the private and public economy. The external-security program was designed to prevent the evasion of disarmament orders by illicit German activities abroad; this included an effective national machinery within each nation concerned, to be correlated by a United Nations German External-Security Council. Its functions included the supervision of German foreign assets and trade, the migration of German personnel, and the handling of related problems by neutral nations. As for the correlation of disarmament and reparations, emphasis was placed on reparation from the transfer of plant facilities and German foreign assets, rather than on deliveries from any current output. The program also included the permanent separation from the Reich of the Rhineland-Ruhr area and the creation of an international trusteeship for its administration; a measure without which more extensive controls over the remaining area of the Reich would supposedly be necessary. This part of the FEA program, indeed, was vague and seems to be less realistic than the balance.

Perhaps the chief merit of the program was in its emphasis on the opportunity to use disarmament to pave the way for a healthy consumer economy; and to make any rearmament attempt hopeless enough in order to help eliminate eventually the German will to war as such. In particular, the program proposed to destroy, in the process of economic disarmament, those social forces which have combined in the past to foster an aggressive state of mind in Germany: the monopolistic industry combines and the big landholdings of the Junkers, as well as the General Staff itself. On the constructive side, the program suggested the encouragement of various economic activities of a peaceful nature in order to provide new employment opportunities. Especially did this apply to an expansion of housing, public construction and transportation; of agriculture, forestry and fishing; of production in the fields of woodworking, cement, plumbing fixtures, glass, home furnishings, and handicraft; and of such major industries as food processing, coal mining, textiles, light chemicals and plastics. The program anticipated a German export-import balance by 1950 at a level of about 3.2 billion marks. Whatever quantitative estimate is adopted, a German economy reconverted to peaceful production is likely to offer a great many productive opportunities.

The FEA proposals for industrial disarmament were followed in general in the *Plan of the Allied Control Council for Reparations and the Level of Postwar German Economy*, which was published on March 28, 1946, as an agreed statement of the four powers occupying Germany. The plan assumed that the German population will amount to 66.5 millions; that Germany would be treated as a single economic unit; and that its exports will be acceptable in the international markets. It aimed at the retention in Germany, after payment of reparations, "of sufficient resources to enable her to maintain herself without external assistance."

Specifically, the plan prohibited the production of arms, ammunition and implements of war, including all types of aircraft and seagoing ships. It eliminated all industrial capital equipment for the production of synthetic gasoline, rubber and ammonia; ball and taper roller bearings; heavy machine tools of certain types; heavy tractors; primary aluminum; magnesium; beryllium; vanadium produced from Thomas slags; radio-active materials; hydrogen peroxide above 50 per cent strength; specific war chemicals and gases; and radio-transmitting equipment. Some of these facilities, however, were to be temporarily retained to meet domestic requirements until the necessary imports were available and could be paid for.

Among the restricted industries, the future production capacity of the steel industry is to be 7.5 million ingot tons, compared with about 23 million in 1938. The allowable steel production is not to exceed 5.8 million tons a year, chiefly from older-type plants. It is not assumed that Germany will export steel during the next few years. Quantitative restrictions are also put on the consumption of copper, zinc, lead, tin and nickel. The basic chemical industries are to retain 40 per cent of their production capacity in 1936 in such fields as nitrogen, phosphate, calcium carbide, sulphuric acid, alkali and chlorine. For other chemicals 70 to 80 per cent of the 1936 capacity will be the yardstick. The machine-tool industry will be cut down to 11.4 per cent and heavy engineering to 31 per cent of the 1938 capacity, while in the electrical industries the percentage will vary from 30 to 50 per cent. The automotive and locomotive capacity permitted will be very limited, while the figures for agricultural equipment are more liberal. Other restrictions apply to electric power, which will be confined to an installed capacity of 9 million KW against 22 million during the war. Further regulations concern the cement, rubber and paper industries. In various important fields, such as coal and potash mining, building, textiles, furniture, glass, ceramics, footwear, optical goods and scientific instruments high production will be encouraged or at least permitted. In general, metal goods and related industries suited for munitions uses are eliminated or severely limited; while light industries of non-military character are permitted to continue or even expand. The general effect of the plan is expected to be a reduction in the level of industry as a whole to 50-55 per

cent of the figures for 1938, and an export-import balance at a level of 3 billion marks for 1949. Implicitly this plan also determines the industrial capacity available for reparations.

CONCLUSION

At the time of writing, some doubt concerning the approach of the Big Four to the German problem still remains. The Soviet Union appears to place emphasis on partial de-industrialization of the Reich through the medium of plant removals for reparation, and on the establishment of a friendly political regime there. British policy has apparently retained some elements of a balance-of-power approach and may also think of Germany in terms of a future market. France believes more in a dismemberment of the Reich and a detachment of the Ruhr than in economic devices. The United States policy has favored various approaches at different times, but has lately veered towards the early formation of a German central government.

The economic merger, in the summer of 1946, of the American and British zones has brought some relief to western Germany, but has also accentuated its practical separation from the eastern zone contrary to the assumptions of Potsdam, even though specific arrangements have been made for the exchange of products from the Russian zone for products from western Germany. At the same time, the declarations of Mr. Molotov in Paris and Mr. Byrnes in Stuttgart both indicated the growing interest of Allied governments in the future attitude of the German people toward themselves.

Perhaps the following conclusions, which are inevitably of a tentative nature, mark an area of far-reaching consent derived from the lengthy and confused debates of recent years:

(1) Despite temporary and, in some cases, permanent losses from war action, the productive capacity of Germany at the end of the war was still overexpanded in the specific direction of economic war potential. A drastic cut in such war-making facilities, especially through plant removal for reparations, was required in the interest of creating a feeling of security in Europe, and in order to render hopeless whatever aggressive spirit may still have survived in German society.

(2) Such elimination of the war orientation of the German economy will clear the way to a consumers' economy and, eventually, to a higher living standard. Prompt conversion to peacetime production and the construction of new civilian industries is necessary in order to foster healthy conditions and democratic progress in Germany. It is in the interest of the Allies to encourage such a course. A fairly low level of the German standard of living is inevitable however for some time to come, as a result of total war and total defeat.

(3) The concrete pattern of economic disarmament will include the complete abolition of specific war industries; the control or reduction to civilian supplies of those industries which have potentially both peacetime and wartime uses; and the expansion or increased productivity of distinctly peaceful business activities such as housing, textiles, and agriculture.

(4) In its foreign economic relations, Germany must give up any attempt to use trade or cartel links for purposes of domination or war preparation. At the same time, it must be left an opportunity to pay through industrial exports for essential imports. Major territorial losses in excess of those determined at Potsdam and more particularly, a loss of the coal areas in the west, are bound to render the German foreign-exchange problem extremely difficult. A working co-ordination of Allied policies in the various occupation zones will encourage both the effectiveness of the occupation authorities and the civilian readjustment of the German economy.

(5) For a considerable period the economic system of Germany will fit neither the pattern of competitive capitalism nor that of a full-fledged socialism. With some differences among the four zones, it will be a strictly regulated economy, based on some degree of private property but involving much public ownership or regulation, under foreign overall control; a control which is guided primarily by considerations of military and political security, rather than those of economic efficiency in the customary sense. The usual criteria of economic development, therefore, will seldom be applicable to the condition of the Reich for some time to come.

(6) Economic and political control of Germany, while indispensable, can only be a stopgap until more general and permanent safeguards of international security are developed. Such safeguards should include, above all, an effective United Nations, bolstered up by a working co-operation of the major Allies of the Second World War; the industrial development of the Continent and especially of the nations to the east and south of Germany; and last but not least, the eventual control of the Reich itself by effective and dependable forces there of democracy and peaceful progress.

(7) While the disarmament and control of Germany is the first condition of progress toward security and prosperity in Europe today, it should not be allowed to weaken our watch for other sources of trouble in the world, especially the possible rise of aggressive spirit elsewhere in the wake of another major depression or quarrels among the Allies themselves. In the last resort the Allied policy in Germany can only be successful if it is integrated with a world policy of security and prosperity.

THE ECONOMIC DEVELOPMENT OF AUSTRIA

by ALBERT LAUTERBACH

The problems of Austria differ from those of most other nations in more than one respect. In the first place, her very existence as a nation and the national characteristics of her population have been a matter of controversy both after 1918 and in recent years. The question whether there was such a thing as an Austrian *nation* or whether Austrians were just a local self-governing subdivision of an all-embracing German "race," was widely argued before the compulsory Anschluss in 1938. It was then temporarily decided by force in favor of the Nazi program. Only in the Moscow Declaration of October, 1943, did the United Nations definitely endorse the restoration of an independent Austria.

Similarly the question whether Austria was "capable of living" from the economic point of view had been under continuous discussion during the first few years of her national existence after 1918 and never received a universally accepted answer. It was the Austrians themselves who were often diffident about their prospects for national survival; a factor which explained the deep inroads the Anschluss program was able to make in that country, either from the economic or from the ideological angle, at various junctures during the interwar period.

Austria had emerged from the collapse of the Hapsburg monarchy, in the wake of World War I, as a "residual" nation, that is, after the non-German-speaking areas of the old empire—and certain German-speaking districts—had been absorbed by some of its former neighbors or by newly created states. The new nation was torn by shortages of food and fuel, by inflation, by bitter class struggles, and by the aroused nationalism on the part of its new neighbors. Over a number of years it remained dependent on assistance from other countries, given directly or through the League of Nations. Then the great depression hit it with full fury. Each time it seemed to approach a new balance it became a victim of economic or political blows.

Its strategic position in the heart of Europe made it a football of power politics on the part of larger nations. Squeezed in between the totalitarian regime of Mussolini and that of Hitler, it succumbed, first to an indig-

enous brand of Fascism in 1934 and then to National Socialism four years later. As "Ostmark" it became a part of Hitler's Greater Germany for a period of seven years. Only after the Moscow Conference in October, 1943, did the general attitude of the United Nations toward Austrian independence become clear. At that conference the Big Three declared "the annexation imposed on Austria by Germany on March 15, 1938, as null and void" and stated that they wished "to see re-established a free and independent Austria and thereby to open the way for the Austrian people themselves . . . to find that political and economic security which is the only basis for a lasting peace." Austria was reminded, however, of her responsibility for participation in Hitler's war and was encouraged to make an active contribution to her liberation.

In the spring of 1945 Austria was occupied by Russian, French, American and British troops. A provisional government of the major anti-Nazi groups was formed in Russian-occupied Vienna, but lack of communications among the four zones prevented at first any unified policy, especially as long as the Western Allies did not recognize the new government, whose initial jurisdiction was thus confined to the Vienna area. For the second time in a generation an attempt had been made to establish Austria as a national entity. However, the circumstances under which this attempt took place were no less difficult than those of 1918.

The trouble began with the geographical demarcation of Austria's frontiers. Marshal Tito's forces attempted to set a *fait accompli* by occupying the region of Klagenfurt, the capital of Carinthia, while claiming this whole southeastern province for Yugoslavia. Elsewhere Austria herself was a claimant for frontier rectifications, though in a more passive manner. The German-speaking sections of South Tyrol, which were annexed by Italy after 1918; the city of Oedenburg (Sopron) in the East, which was assigned to Hungary after the first World War even though the adjoining Burgenland area was given to Austria; and the Bavarian salient around Berchtesgaden, were this time considered for allocation to Austria. For a country whose size equals only that of South Carolina or Indiana, and whose total population is about the same as that of Illinois, the economic importance of such frontier issues is considerable. Both Klagenfurt and Oedenburg are important centers of communications and trade. South Tyrol might improve the Austrian balance of payments through fruit exports and by attracting tourist traffic, and the Berchtesgaden salient is of importance for the communications in western Austria. More far reaching claims of certain Austrian groups, involving all Bavarian land east of the Inn River, for instance, have not found any serious consideration.

The main issue, however, concerns the future attitude of Austria's neighbors and the United Nations. If a new wave of nationalism should result in a hostile attitude of these countries toward the new Austria; if history

should repeat itself in an erection of high trade barriers throughout the Danubian area; if Austria's share in the past Nazi domination of Europe should lead to punishment, rather than rehabilitation; if her occupation and her division into four zones should be prolonged, then prospects for her successful reconstruction would remain doubtful for a long time to come.

After the Potsdam Conference it was stated officially that no reparations would be asked from Austria. The Potsdam provisions, however, were interpreted by Soviet and French forces of occupation in the sense of a title to carrying away a great deal of Austrian industrial equipment which had been appropriated by German groups during the Hitler regime. In addition, the Soviet Government also claimed that the Potsdam settlement entitled it to take over German-held shares of companies with headquarters in eastern Austria even if their plants were located outside the Russian zone, such as the Alpine Montangesellschaft. The Austrian government disputed this interpretation, which the Soviets also extended to Austrian shipping on the Danube and to the two largest banks in Vienna, the Creditanstalt and the Länderbank.¹

Some of the other questions mentioned also at first remained unsettled, even though the provisional government at last received *de facto* recognition from the four powers in October, 1945. Any discussion at this time of Austria's economic future inevitably remains subject to many reservations.

Austria's Resources

The old Hapsburg Empire, of which Austria had been a part until 1918, was far from being an ideal economic unit. While some of its western areas were highly industrialized and prosperous, many of its eastern and southern provinces were backward and poverty-stricken. However, the collapse of the Empire resulted in a severe economic handicap for the new Austria, for its industries and cities had grown up on the basis of a market in excess of fifty million people. Moreover, the new Austria appeared topheavy from the viewpoint of economic geography. Almost one-third of the total population lived in the city of Vienna and another one-fourth in Lower Austria, near the capital. Thus one-half of the population was concentrated in the northeastern corner of the country. The two other areas of major industrial concentration, Upper Styria and Linz-Steyr, were likewise located in the east or north. So was most of whatever fertile flat farmland

¹ The clause in question stated: "The Governments of the United Kingdom and the United States of America renounce their claims in respect of reparations shares of German enterprises which are located in the eastern zone of occupation in Germany, as well as to German foreign assets in Bulgaria, Finland, Hungary, Rumania and eastern Austria." In November, 1945, the average productive capacity left to Austria was estimated at 60 per cent of that in 1937 (much less in the Russian zone), and only 20 per cent of the existing capacity was utilized, according to the *London Economist* of December 1, 1945.

Austria had inherited. The remaining districts consisted of picturesque mountain country with vast forests and pastures, a few fertile valleys, and scattered industries, largely of a local character. Communications were limited as a result of mountain barriers and, in some cases, of political frontiers.

The territory of the new Republic amounted to 32,369 square miles, and its population, in 1934, to 6.76 millions, with an average of 209 persons per square mile. About 27 per cent of the population were employed in agriculture, 33 per cent in industry and 15 per cent in commerce and transportation.

The distribution of land uses showed a large share of forests (37.4 per cent of the total area in 1938). Arable land amounted to 23.6 per cent, and meadows and pastures to 26.7 per cent of the total, with rocky wasteland in the mountains accounting for most of the balance. An average 18 per cent of the arable land was used for rye, 15 per cent for oats, 13 per cent for wheat, 9 per cent for barley, 11 per cent for potatoes, 2 per cent for sugar beet, and the balance for such products as feedstuffs, corn, flax, wine and vegetables. The per-acre yields were fairly low except in some of the northeastern areas.

As for raw material resources, one of the great assets of the country was its iron ore, especially the surface deposits at the famous Erzberg in Upper Styria. Austria's production of iron ore from 1938 to 1943 averaged 900,000 to 1,000,000 metric tons (iron content) a year. On the other hand, her coal resources were inadequate and the bulk of it consisted of brown coal (lignite). There were also substantial deposits of bauxite, magnesite and salt; some graphite, uranium, and gypsum; and minor deposits of copper and gold in Salzburg, and of silver in Tyrol. One of the greatest potential assets of the country was its huge resources of waterpower.

The Austrian industries showed a combination of iron and steel plants with extensive manufacture of consumer goods, such as metalware, electrical appliances, clothing and processed foodstuffs. A good-sized paper industry was based on the rich domestic resources of timber. The Vienna area and Upper Austria also included substantial output facilities for locomotives and automobiles. Both this area and the far west had a considerable textile industry, while Upper Styria represented a heavy concentration of iron and steel production.

Many of these industries were dependent in a high degree upon export opportunities. In 1929 the exports of the country equalled in value more than 30 per cent of its national income. The disruption of the world markets during the following years cut this percentage in half, along with a shrinkage of the national income itself from 7.2 billion schillings in 1929 to 5.4 billion in 1934. The percentage of unemployed workers in 1929 was as high as 12.3, for Austria had never overcome completely her structural

depression which had resulted from the evil sequence of war, protectionism and inflation. By 1932, this percentage had increased to 26.1 and in 1937, the last full year of Austrian independence, it was still 20.4, though the world armament boom of the 'thirties had brought Austria some relief.

Economic Effects of Nazism

The seven-year period from March 1938, to April 1945, brought far-reaching changes in Austria's economic structure. After transitional difficulties which were cushioned by Hitler's rearmament boom, the country was fully absorbed by the state-controlled, war-guided *Grossraumwirtschaft* of the new Greater Germany. A mere eighteen months after the Anschluss the latent European war entered its open military phase. From then until her liberation in 1945 the economic development of Austria was influenced, above all, by her relatively remote and, from the Nazi viewpoint, seemingly safe location. Other factors of great importance in determining her role within Hitler's *Wehrwirtschaft* were the extent of Austrian resources in iron ore and transportation, and the manpower available there for new war production.

The result was a new industrialization of great significance, some of which took place at the expense of old peacetime industries. In a much higher degree, however, this process brought a net addition to the industrial plant of the country. Until 1944 the damage wrought by Allied air raids remained very limited. Even then it reached nowhere the extent of havoc wrought in Germany upon such industrial areas as the Ruhr or Berlin, although such specific districts in the Vienna area as Floridsdorf and Wiener-Neustadt were hard hit.

Of course, the bulk of the new industries was built for purposes of a war economy and without much regard for peacetime needs or prospects. Specifically, a new industrial belt was developed between Vienna and Linz, and to the south of Vienna. The Hermann Goering-Works built large-scale plants at Linz and Vienna, and Krupp likewise expanded in Austria. New munitions factories, in some cases transferred from the Ruhr, were erected in the Lower Austrian area near Enzesfeld, Hirtenberg and Berndorf. The heavy industries in the Styrian valleys of the Mürz and Mur Rivers were expanded into an enormous agglomeration of arms factories, and the iron ore and magnesite mines in the same region were exploited on an unprecedented scale. The output of aluminum was increased to a level fifteen times higher than it had been before 1938. A production of synthetic fiber was built up in Upper Austria.

Both this new industrialization and the Nazi employment of older industries were accompanied by a greatly increased control over the Austrian economy on the part of German concerns and combines, on top of older forms of influence through capital links and cartel agreements. The ac-

quisition by Reich interests of investment assets and patent rights in Austria also applied to Austrian capital holdings abroad, especially in the Danubian area. In the case of Jewish-held rights outright confiscation was the prevailing technique used. In other cases Nazi-minded Austrian capitalists co-operated willingly in establishing a financial control of Reich groups, often against a moderate compensation in German industrial shares. Likewise the banks of Vienna virtually became provincial branches of Reich banks. The gold holdings of the Austrian issuing-bank had been seized and brought to Berlin immediately after the Anschluss.

The financial and industrial links which traditionally connected Austrian business with the Balkans were used and developed by the Nazis in order to strengthen their economic hold upon that area. The idea was to make Vienna the center of export business for German industries to southeastern Europe. This was the purpose of such Nazi agencies as the *Südosteuropa-Gesellschaft*, which was also designed to influence agricultural production and export from these countries in line with the needs of the German war economy. This latter policy, for that matter, also applied to Austrian agriculture itself. In particular, the timber resources of Austria were exploited in a reckless manner.

On the other hand such individuals and business groups as were *personae gratae* with the Nazis received an opportunity to participate in their exploitation of victimized countries all over Europe and especially in the east and southeast. This was true of certain banks, insurance companies and industrial concerns alike. Their responsibility for this share in the Nazi loot is unmistakable.

Some more lasting benefits, however, resulted for other sectors of the Austrian economy from the general mobilization and expansion of its resources in the wake of German rearmament. Potentially this applies, for example, to progress made during these years toward the construction of a canal network along the Rhine-Main-Danube, Rhine-Neckar-Danube, and Elbe-Oder-Danube lines. It also applies to the expansion and modernization of the Austrian automotive industry and perhaps to the new construction of an aircraft industry there; to new developments in the chemical and rayon industries; to the feverish drilling of oil wells at Zistersdorf in Lower Austria, which resulted in an output at the time of liberation of about 1.2 million tons a year compared with an annual consumption of pre-Hitler Austria of only 340,000 tons. It applies, finally, to the far-reaching development of the water-power resources of the country and the introduction of improved methods for the industrial utilization of Austrian brown coal.

It would, of course, be a completely false conclusion to believe that the incorporation of Austria into the Nazi war economy was an unmixed blessing for her. Austrian agriculture, after initial gains, suffered from the war-

time strain on soil, livestock, forests and machinery; the consumption-goods industries were hit severely by the concentration of all economic activities upon rearmament; and, last but not least, the Austrian population was adversely affected by combat losses, displacement, shortages, and long working-hours in the factories, not to mention the political and ideological oppression of anti-Nazis by a brutal totalitarianism. Some estimates of the loss in male population in the age group between 20 and 40 years, from death or disability, are as high as 50 per cent. At the same time, the wartime intrusion of both forced labor from German-occupied countries and refugees from the Reich itself resulted in a very serious post-war problem of Displaced Persons. Finally, physical damage during the last phase of the war and the general economic collapse during the early occupation period; the requisitioning of food, housing, transportation and machinery by the occupation forces; and especially, the disastrous shortage of food and fuel in the fall of 1945 and after, have made Austria pay dearly indeed for the economic advantages Nazism had seemed to offer her temporarily.

At any rate, whatever economic merit there seemed to be in an Anschluss program during the early years of the first Austrian Republic, has little meaning today. The artificial wartime market for the new armament industries in Austria is gone, and there is little the Reich will have to offer to her civilian industries for a long time to come. Moreover, the totalitarian methods applied by the Nazis in their Anschluss policy and the certainty that, as a German province, Austria would have received a good-sized share in the punishment and reparations burden of the Reich, are likely to discredit any revival of such programs. The second Austrian Republic has to find a new economic balance of its own. In this process its greatest task will again be to prove its "capacity to live," that is, to live on an acceptable level of production and consumption.

The Outlook for Economic Development

Opportunities for physical development of a country do not always represent an economically justified field of investment. On the other hand, the profit outlook alone cannot always express an economic necessity for such development, especially in a war-torn and impoverished country like Austria.

Urgent necessities for relief and rehabilitation should be clearly distinguished from the development of resources over a prolonged period. Despite the desperate shortage of food, fuel, clothing, seed and fodder, tools, and vital transportation equipment, actual relief supplies to Austria during the first few months after her liberation were very scanty. The UNRRA, in particular, was slow in extending its activities to that country. A substantial proportion of the relief needs might have been obtained from neu-

tral countries, but the disruption of Austrian administration and transportation, the uncertainty about the occupation scheme and Austria's future status, and other factors, impeded any early help. At any rate, a systematic effort in Austria to mobilize her own production facilities for all essentials and to distribute wisely such foreign relief as is forthcoming, remains of fundamental importance.

Here again, however, any such effort was impeded during the early months after her liberation by adverse factors of a military and political character. The newly formed Renner government, which included Social Democrats, Catholics and Communists, did not receive any recognition from Allied governments until October 1945, and its influence was at first confined to the Vienna area. The tiny country was split up into four occupation zones among which little if any traffic existed at first; later some barter arrangements among the four zones were worked out. The city of Vienna, which was also divided into four occupation zones, suffered from a desperate food shortage due to the impossibility of receiving adequate food shipments from the rural districts. Only the agreement of August 8, 1945, between the United States, the Soviet Union, Britain and France, which regulated the occupation zones and set up an Allied Commission for Austria, also promised "to secure the establishment, as soon as possible, of a central Austrian administrative machine," but not until after the election of November 25, 1945, did it actually get under way. In June 1946, the Government finally received substantial powers for legal and economic co-ordination of the four zones.

As the immediate problems of physical survival and of a working administration are taken care of, a smooth transition from the ruins of a Nazi-guided war economy to more promising and peaceful activities becomes imperative. In the field of agriculture Austria has the advantage that the task of agrarian reform was solved for the bulk of her landholdings long ago. Only in the northeast have there been substantial survivals of big landownership from earlier periods of economic life. Elsewhere most of the land, with the exception of some forest areas, has for a long time been owned by family-type farm units.

Much remains to be done, however, in improving the efficiency of the average farm, even though considerable progress was made between the two world wars toward an adequate total output. It is true that the mountainous character of the country sets definite limits to the mechanization of farm output. So does the small size and scattered location of peasant landholdings. Yet there is much room for the introduction of up-to-date tools, machines and appliances, if not on every individual farm then through the medium of farm co-operatives. This is of particular significance after the wartime strain on all productive resources of Austrian agriculture.

The production of livestock and dairy goods can probably be brought back to its prewar level within a few years and such products as butter and cheese promise to show exportable surpluses under peacetime conditions, although the deficit in total fat production is likely to persist. As for grain, Austrian output in 1937 covered the following percentages of domestic consumption: wheat 56.8; rye 71.6; barley 85.5; oats 91.2; corn 33.4. The country was self-sufficient in potatoes and sugar. The quantity and, above all, the quality of Austrian fruit production can also be greatly improved by the employment of up-to-date devices and processes, including adequate facilities for canning.

In certain areas, such as the Burgenland in the east and some Alpine valleys, drainage and reclamation may add new land to the existing facilities. The wartime exploitation of timber resources by the Nazis will necessitate the reforestation of some areas. It remains to be seen, on the other hand, whether there is any economic use in peacetime for such new crops from the Nazi period as soybeans and tobacco. Likewise it is somewhat doubtful whether the Austrian beet-sugar production can survive without substantial tariff protection. If it cannot, then this would be a good time to replace it by more economical crops.

In various fields of farm production, especially those which depend on export, the introduction of modern refrigeration facilities and processes would be of great importance. Incidentally, in Austria and all over the Continent there is also a potential household market for electric refrigerators which has hardly been tapped, though it may gain in importance later with a consolidation of economic life. The actual use in Austria of such devices and other electrical appliances will in part depend on a plentiful and cheap supply of electric power. Some of it may come from waterpower plants already in existence, old or new, especially as the extensive destruction of German industries has eliminated part of the old market. Some of the existing large-scale facilities, however, are in the west of Austria, far from the industrial and urban centers of the east. The total power supply has increased from 2.8 million kilowatt hours in 1938 to an estimated 7.2 million in 1944.

At any rate there are still considerable opportunities for an economic development of Austrian water power. Especially would this be true if Czechoslovakia should be able to take up some of the exportable power surplus from Austria. Suggestions have also been made for a "TVA on the Danube," which would combine electrification, resettlement and agrarian reform. Elaborate plans are available for the effective utilization of Danube water power, of the Inn, Oetzal and Pitzbach valleys in Tyrol, and of the enormous water resources of the Hohe Tauern range in the Central Alps. According to estimates of the Ministry of Commerce, an annual output

of 25 million kilowatt hours could eventually be attained. This would make Austria independent of fuel imports.

Certainly an increased supply of cheap energy could make the farms, industries and households of the country more efficient. It could also contribute to a successful readjustment of the Austrian balance of payments by reducing the need for coal imports. In the past, fuel imports accounted for about 10 per cent of the total imports. The electrification of the Federal Railroads, which has been well under way since the middle of the 'twenties, still leaves some trunk lines and numerous branch lines to be electrified.

Another fundamental addition to Austria's supply of energy may come from a development of the Zistersdorf oil wells, which made Austria during the early forties the second-largest oil producer in Europe, after Rumania. The economic value of these wells has been increased by the fact that they are close to great industrial areas in Austria and Czechoslovakia, to several railroad trunk lines, and to the Danube River. The oil refineries at Vienna have largely been destroyed, but the city retains at least an old tradition in oil business from the period when it was a center for trade in Galician and Rumanian oil. The motorization of Austria is still in its beginnings, but would be greatly encouraged by the availability of cheap oil. This presupposes a considerable investment in highway construction, which could be integrated with those motor roads built by the Nazis. However, the remaining volume of the Zistersdorf deposits is uncertain and they will certainly require deep drilling, since the wartime jump in production appears to have been due in large part to reckless exhaustion of wells by such Nazi agencies as the *Ostmärkische Mineralölwerke*. In October 1945, Soviet authorities seized the oilfields and demanded the formation of a joint Austro-Russian company for their exploitation, on the grounds that 51 per cent of the shares had been German-owned; a demand which the Austrian government rejected.

It is uncertain, at the time of writing, how much of the old and new industrial plant of Austria can be reconverted to peacetime production, to the extent that it has not been carried away by occupation forces. This question concerns, in particular, the automotive industry and the United Austrian Iron and Steel Works in Linz, the former Hermann Goering-Works. This combination of blast furnaces, steel and assembly plants and chemical works was equipped to produce 2,000 tons of pig iron a day, in addition to coke, benzol, naphthalene, coal gas, fertilizers, and electrical and metal goods. Its former coal supplies from the Ruhr, Czechoslovakia and Upper Silesia have been cut off, but an early attempt has been made to trade Austrian pig iron for Czechoslovak coal. One of the main questions in the long run, however, concerns the availability of sufficient markets for peacetime products of plants built on such a large scale.

There is need for decentralized industries in the Alpine provinces, preferably those based on their own raw materials, such as leather and paper factories, canning and cold-storage facilities and modern saw mills. There are also peacetime possibilities for the continuance of a considerable chemical industry, perhaps in some connection with existing gas plants. Many of the older industries are in dire need of modern equipment and organization. The artistic-specialty industries of Vienna and other areas depend almost entirely on export and tourist traffic.

Some of the traditional service trades of the country, especially the banking, insurance and transit business of Vienna, might be revived with a consolidation of the Central European economy and with the help of such institutions as the Vienna Fair. As for export prospects, the emphasis appears to be on markets for consumers' finished goods, especially in southeastern Europe. Although investigations from the Nazi period obviously cannot be used without great reservations, a report in August 1944, of the *Vienna Institut für Verbrauchs- und Absatzforschung* is worth some attention because of the potential markets in the Balkans it specifies for Austrian drugs and cosmetics, paperware, household goods, optical products, toys, glass and ceramics.

The geographical characteristics of Austria point clearly to her great possibilities as a crossroads of European air traffic; and to a great potential income from tourist trade, especially if up-to-date railroad stock and other equipment can be secured. Vienna's fashion trade may also be revived and expanded. It is difficult to define at this time the future extent of traffic on the Danube River and the prospects for a huge harbor at Vienna. Likewise it remains to be seen whether there is any economic need or justification for an Austrian merchant fleet, operating either from Vienna or from a Mediterranean or Adriatic port. It is more likely that what is needed will be free harbor zones at such places as Trieste. Such service for Austria and other countries in central and eastern Europe, incidentally, appears to offer the only real hope for sufficient employment and economic survival of that great port.

A field in which Austria is in desperate need of new facilities is housing, both urban and rural. Bomb damage in industrial centers is not the only factor which necessitates repair and new construction. Throughout the inter-war period Vienna and other cities suffered from an acute shortage of up-to-date housing facilities. This shortage, which had originated in the first World War, was only partly relieved in Vienna by the famous residential developments of the municipality, and it was even worse in other cities. As in other countries, many farm buildings have for years been in need of repair or rebuilding, a need which has grown much worse during the war period.

All such projects presuppose a sufficient supply of labor. This may sound

like an unnecessary warning for a country which has suffered in the past from chronic unemployment. However, compulsory labor service has been introduced for the reconstruction of Vienna; and the repatriation of foreign workers and of refugees from the Reich, the wartime drain on men in the younger age-groups, and the fairly low birthrate of the last few decades, may result in a prolonged deficiency in labor supply if economic activities are kept on a reasonably high level; if Austria is not drained unduly of industrial equipment by occupying powers; and if extensive projects for resources development should materialize. It may, therefore, be of great importance to encourage an adequate supply and efficiency of labor by keeping the wages and social benefits at a level which is in line with the high vocational skills and cultural aspirations of the Austrian worker.

Credit, Investment, Trade

While there is little doubt concerning the wide need and opportunities for new investment, its future sources are still in the dark. It is certain, however, that neither domestic nor foreign investment in a country as inflation-conscious as Austria can be expected to materialize on a sufficient scale unless her new currency promises real stability. This does not mean, of course, that the old schilling parity (\$0.1407) should necessarily be aimed at. Austria's foreign assets at the time of Hitler's invasion included gold reserves of 420 million schillings and clearing assets of some 150 million, not counting 50 million due from Germany. Even on the unlikely assumption that all of it should eventually be recovered, too many factors have changed in order to warrant a simple restoration of the old parity.

After the liberation of Austria, the illicit influx of Reichsmarks from Germany and other parts of Europe was at first kept down by the breakdown of communications. Later, however, it assumed alarming proportions, and it was accompanied by a growing circulation of Allied military schillings as well, in a country depleted of almost any kind of commodity. On December 21, 1945, a novel and drastic currency reform took effect. It represented, not the real program of the Government, but a concession of the latter to the occupation authorities, especially the Soviet Army, which held substantial stocks of marks.

Under this reform, 2.5 billion Allied military schillings and an estimated 7 to 10 billion Reichsmarks were to be replaced by 4.5 billion Austrian schillings. Of this total, 2 billion were earmarked for the use of the occupation authorities and 2.5 billion for the Austrian population, compared with a prewar circulation of 0.9 billion schillings. Compulsory exchange of all notes of ten marks or schillings, or higher, was decreed along with the temporary blocking, to the extent of 60 per cent, of all bank accounts in old currency. There was a limit of 150 new schillings available per person, and no cash at all for corporations. Part of this complicated

setup was due to the wish to fight the black market, or to the difficulty of printing sufficient amounts of the new currency promptly enough.

It is now assumed as likely that the new currency can be kept stable without such psychological devices as a general mortgage on real estate, public utilities, or governmental and industrial property. Any such provisions would be pointless from the viewpoint of a Western economist, but they may be of importance for the psychology of a nation which has gone through the ordeal of inflation twice in a generation. Especially is this true if Austria should remain excluded for any prolonged period from stabilization-fund assistance under the Bretton Woods agreements.

However, the Austrian currency problem is also influenced by other than strictly monetary factors. Austrian financial interests had some share in German capital exports during the last year or two of the dying Hitler regime. Some smuggling of gold and art objects appears to have taken place. At the same time, the Hermann Goering-Works and other Reich groups sold much of their industrial plant in Austria to private firms there after 1943. In other words, a thorough investigation of the entire property and investment structure in the country is indispensable, the probable result being serious limitations to private domestic investment there for some time ahead.

In addition, the domestic credit system has been largely disrupted, first by the policies of Nazism and then by its collapse, followed by a division of Austria into four zones. Even before 1938 various banks and insurance concerns in Austria were dominated by German groups and after the Anschluss their domination became all-embracing. The Creditanstalt-Bankverein was controlled by the Deutsche Bank; the Länderbank by the Dresdner Bank; the Creditinstitut für Öffentliche Unternehmungen und Arbeiten by the Bayrische Hypotheken- und Wechselbank; the Vereinigte Industrieunternehmungen by the Reichskreditgesellschaft; the Anker Insurance by the Viktoria zu Berlin; and the Phönix-Wiener Allianz by the Allianz-und-Stuttgarter insurance group.

This means that the capital structure of Austria requires thorough clarification. All German property holdings have been put under government control. It remains to be seen whether any of them at all will be recognized as valid, and whether any substantial loss to Austrian capital groups will result from the invalidation of German holdings abroad in which Austrian business had a share. Moreover, a substantial proportion of Austrian savings appears to be frozen in Reich bonds. This also applies to bank assets. A *Kreditlenkungs-Kommission*, on which the government, labor, industry, commerce, banking, agriculture and the three political parties are represented, has been put in charge of determining the general investment policy.

Chances are that extensive shortages both of working capital and of long-term investment will persist. Austria will thus offer potential opportunity

for foreign investment capital. However, this is true only with a number of qualifications. First of all, her past experiences with foreign loans were controversial and future investment from abroad may conceivably enjoy little popularity, even though the country needs it badly from a strictly economic point of view. Foreign investment there often involved attempts to influence the political and social balance of power in the country. This applied not only to industrial control by German combines, which included during the inter-war period the largest Austrian enterprise, the Alpine Montangesellschaft. It also applied to political conditions for financial assistance which were raised or implied by western governments or capital groups in such situations as the financial breakdown of 1931. Austria also ran into the pitfalls of foreign short-term credits in a deflationary condition of the world markets, since Austrian banks had recklessly used such credits as a basis for long-term industrial investment.

The main question, however, concerns the future setup of the Austrian balance of payments. To what extent can the country absorb foreign capital on a sound economic basis, and how can it secure the foreign exchange necessary for interest and amortization?

As for foreign trade, Austrian imports in 1929 amounted to 459 million (old gold) dollars, against exports of 308 million. In 1937, the last full year of independence, the figures were 161 million for imports and 135 million for exports. Throughout the inter-war period Austria had an import surplus which was covered from transit services, tourist trade and foreign loans. Initially she also had substantial revenues from capital holdings in other countries of central Europe, but these revenues decreased later. However, Austria's own foreign debt was also reduced, from 4.2 billion schillings in 1923 to 2.0 billion in 1936.

In her foreign trade Austria depends very largely on European nations. In 1935 the share in her trade of those imports derived from Europe was 82 per cent, and the share of Europe in her exports was as much as 89 per cent; in both cases far more than the share of that continent in the foreign trade of any other highly industrialized country. At the same time, Austria's share in the total imports of Europe was only 2 per cent and that in total exports only 1.9 per cent. The relative importance of industrialized countries in Europe for the Austrian trade declined after the great depression. Her relations with the more agricultural countries of the Danube Basin retained great significance, while her trade with overseas nations showed relative gains. The total surplus of imports was greatly reduced between 1923 and 1937. The aggregate share of the Danubian countries (Czechoslovakia, Yugoslavia, Hungary, Rumania) in Austria's trade in 1937 was 27.4 per cent on the export side and 34 per cent on the import side. Conversely, Austria absorbed in the same year 16.9 per cent of Hungarian and 13.5 per cent of Yugoslav exports, while Hungary derived 18

toward a tariff union or economic federation in the Danube Basin, will be more successful than they were during the inter-war period, when they never reached a serious stage of development—the Hapsburg issue being one of the main impediments.

In case neither a new order in the Danubian area nor other factors should help Austria establish an export surplus, or at least keep her import surplus down, she may be unable to absorb substantial foreign loans on a purely commercial basis even though she will need them badly. Transit services and a revival of tourist trade—which brought Austria a revenue in 1937 of about 150 million schillings—are not likely to produce surpluses large enough to cover the interest and amortization service on huge loans. Internationally guaranteed, low-interest, long-term loans under the auspices of the International Bank for Reconstruction and Development (the Bretton Woods Bank) may be the answer, provided Austria will be offered an opportunity to make use of such facilities.

What Kind of Economic System?

Any discussion of the economic development of Austria or any other Continental country is bound to remain in a vacuum as long as any uncertainty remains concerning the type of social and political institutions which can be expected to prevail there in the long run. In particular, Austria has experienced only too often the adverse effects which political struggles and pitfalls may have upon efforts toward a development of physical resources and toward economic progress in general.

The dangers which are implicit in any revival of monarchism have already been mentioned. Prospects for a success of such schemes are very remote for any measurable space of time, but it is not impossible that Hapsburg propaganda or lobbying might bedevil all attempts toward reform and co-operation in the Danubian area unless the nations concerned remain on their guard.

At the present moment the future impact on Austria of communism, in a party sense, and of the real power behind it, the Soviet Union, is difficult to evaluate. To the extent that patterns of the past and the November 1945 election can provide a lead, popular support for party communism is likely to remain very limited. However, if Austria should fall into an interest sphere of the Soviet Union, then even a small communist movement might exert considerable influence. It would, indeed, be a mistake to assume that this would necessarily mean a sovietization of the Austrian economy. Communist party attitudes in Europe and the western world reflect primarily the momentary trend of Soviet foreign policy, rather than any constant drive toward social revolution. In other words, the Soviet Union may or may not find it desirable to support great social changes in Austria,

depending on the international situation. She has opposed, in particular, the nationalization of Austrian industries which she claims herself on grounds of the Potsdam agreement.

If, on the other hand, Austria should be able to shape its domestic policy in full independence, then her socio-economic system is likely to attempt a compromise of two great movements which are firmly rooted in her history: a moderate democratic socialism based on the support of industrial workers, and a democratic middle-class conservatism led by Catholic peasants. The November 1945, election brought a slight majority of the People's Party and a moderate Conservative as chancellor. However, the general trend of economic policy in post-war Europe favors democratic overall planning, with socialization of some key industries and continuance of private property in agriculture and non-monopolistic lines of business.

Representatives of Austrian organized labor have gone on record in favor of a socialization of mining, the oilfields, chemical plants, the power industry, transport, banking and insurance. The production of iron and steel, locomotives and railroad cars and heavy electrical equipment, may follow before long. It should be realized that the bulk of transportation and public utilities has for decades been publicly owned in Austria, as in other Continental countries. At any rate it is doubtful to what extent a purely financial pressure of distant western powers, perhaps in connection with the credit needs mentioned, could be effective in forcing Austria or other Danubian nations into a strictly capitalist policy, even if such an attempt should be made with encouragement by indigenous conservative forces.

For one thing, the old capitalist groups in Austria have largely disappeared. Their Jewish sector has been dissolved through emigration, confiscation of property, or physical extinction, while many non-Jewish businessmen have been discredited through Nazi activities or at least through profits drawn from the Nazi regime. In other words, unless and until new groups of capitalists and also a new urban middle class emerge after the double drain of the Nazi and post-Nazi regimes, there is no real basis in Austrian society for any economic policy on American lines, and the main hope for industrial revival today is in a purposeful production policy of public agencies. Commerce Minister Heini, a conservative Catholic businessman, endorsed such a course for the Renner government in the early fall of 1945, and the three major parties appear to be agreed on it in a general way. One of the issues involved concerns the restitution laws to be adopted, but progress on them has been slow.

The main problem of economic policy in a war-torn country like Austria, for a long time, will not concern the mere prevention of oversaving or surplus output, and not the discovery of new opportunities for investment. In more than one respect the problem will be of an opposite kind to that

facing post-war economic policy in a country like the United States. The task of full employment, to the extent that it depends on domestic factors, involves a development of new peacetime resources, as well as the utilization of existing idle resources. Shortage, not oversupply, of raw materials and equipment will remain one of the main headaches for some time to come. Once a normal flow of production has been reestablished, there will be no genuine excess savings for a long time. The inflationary danger will far exceed that of deflation for quite a while.

One of the devices likely to find support in Austria is an expansion of co-operatives, both those of farmers and those of consumers, in close mutual collaboration. There also appears to be a general desire for a restoration and expansion of an elaborate system of social insurance. It is now widely assumed that poor countries, as long as they have a high standard of education and substantial latent resources, can "afford" social insurance; and that they may, in fact, need it more badly than do rich ones. Experiences from the inter-war period also indicate that trade unions and shop councils can play an important and constructive part in the industrial readjustment of Austria. Unionism in that country has traditionally been interested not only in matters directly affecting wages and working hours but in broad issues of social and economic policy.

The great city of Vienna, which was considered after 1918 a heavy mortgage on the Austrian economy—some people used the none too flattering term "hydrocephalus"—is somewhat more likely to be regarded as an economic asset this time, despite the physical and economic damage wrought to it. Its communications, its cultural tradition, its skills and industries, and the forward-looking spirit of its population have not entirely disappeared even after the seven dark years of Nazi rule. In some respects its economic readjustment, while a crucial task, may be less difficult this time than it was after 1918, when the city had lost overnight its century-old role as the capital of a vast empire. It is, indeed, the future economic setup and policy of the other Danubian countries which will in part decide upon the prospects for a prosperous Vienna and, for that matter, on the question whether Austria as a whole is capable of living on an acceptable level. The extent to which water traffic on the Danube is restored, and the freedom with which that traffic can move, will also affect future Austrian prosperity.

It will also be of great significance to determine the amount of economic encouragement which the great powers are willing to give both Austria and its neighbors on the Danube. If the Soviet Union, in particular, should retain the decisive influence in that area, then the amount of trade opportunities she is able to offer Austria remains to be defined. It is also uncertain whether she will permit the formation of an economic union or federation in the Danubian Basin, even assuming that such a unit would offer clear-cut

guarantees against any anti-Soviet or pro-Hapsburg policy. As for the Western powers, their credit and trade capacity could contribute much to Austrian reconstruction, depending on the general outlook for world prosperity.

The great question mark is whether the great powers to the east and west are willing to offer such encouragement without trying to impose upon the receiving country unbearable political conditions. This, in fact, is the great predicament in which many small nations may find themselves in the post-war world. Austria herself can contribute much to keeping such demands down by eliminating speedily and permanently every remaining vestige of Nazism and Fascism, and by demonstrating to the world a genuine spirit of democratic progress.

EASTERN EUROPE AND THE SOVIET UNION

*THE BALKAN COUNTRIES**by* KURT LACHMANN

The Balkan countries entered the era of modern industrialization about 70 years behind the nations of western and central Europe. Historically the time-lag in development is a common feature of various regions of the earth and also of some sections within far advanced countries. It does not spell any essential inferiority on the part of the people concerned or a permanent, preordained status of nature. Psychologically, however, the backwardness in techniques, production, manners and standard of living implies a stigma which is felt by some as a curse, by others as a challenge or iniquity causing reactions which vary from fatalistic apathy to violent self-assertion. If this is to be the century of the common man, it will have to do away with the inferiority complex of the late-comer as well as with the condescending self-assurance of the arrived. Progress through co-operation which means betterment through fraternal endeavor can only succeed by the virtue of humility.

The reasons for the time-lag in Balkan economic and social development have to be sought in mental and political conditions. This is an area of Europe which was held in the bonds of the Byzantine Church and of the Ottoman Empire at a time when western and central Europe had long ago shaken off the fetters of feudalism and obscurantism and through the released energies of the freed individual had created modern science, industry and democracy. In all western and northern European countries modern industrialization was preceded by the struggle for national autonomy and popular self-determination, which set free new biological and mental energies. In the Balkans the Ottoman Empire had prevented the emergence of a middle class which elsewhere formed the vanguard of progress. The disintegration of the power system of the Sultans took about as long as that of the Czars of Russia. In the Balkans the time-lag in national liberation coincides more or less with the time-lag in economic progress.

The vanishing Ottoman Empire left the Balkan countries without a feudal caste of big land-owners except for Rumania, and simultaneously without a strong middle class. Princes and railways were promptly furnished by the West and with them the laws and administration.

On the broad basis of a primitive peasant society grew a westernized royal court surrounded by a fast expanding clique of soldiers, financiers and bureaucrats. The prestige and income which went with these privileged positions attracted the gifted and adventurous sons of the peasants and left few talents for the technical trades. The royal courts fulfilled the function of city building which in time created new desires and habits of consumption. Simultaneously they concentrated a very large share of the slowly accumulating capital in ostentatious buildings, military splendor and the paraphernalia of modern prestige, which contrasted sharply with the primitiveness of peasant life. In a period of falling prices for agricultural products this widening gap was bound to result in an alignment of the peasants against the city. The struggle between the peasants and the city was over the cutting of the pie rather than over the increase of wealth. The independent middle class, which led the industrialization of western and central Europe and created the class of industrial workers from the surplus of the agricultural population, had no time to grow up correspondingly in the Balkan countries. Greece forms an exception, because the earlier date of national liberation and natural conditions favored the growth of shipping and trade. Whereas in Rumania, Bulgaria, Yugoslavia and Albania 70 to 80 per cent of the population depend mainly on agriculture, the Greek ratio is only 64 per cent. In central and western Europe the ratio is not more than 20 to 35 per cent. The decline of the middle class in central and western Europe as the dominant factor in economic and political life has been hastened by the two great wars. If the Balkan nations are now to enter the period of large-scale industrialization, they are likely to skip most of the middle class phase of free enterprise and engage immediately in industrialization under state control or ownership led by the rising group of university trained bureaucrats and technicians.

Variations Within the Balkans

There are wide differences in educational and economic levels within the five countries—Rumania, Bulgaria, Yugoslavia, Greece and Albania. Those parts of Rumania and Yugoslavia formerly under Hapsburg rule show a much higher degree of literacy and of economic organization. Those areas under former Austrian administration, like Slovenia and Bukovina, are more advanced than those formerly under Hungarian administration like Transylvania, Croatia and Vojvodina. These gradual drops of civilization promoted healthy emulation and cross-fertilization and, as the dangerous counterpart, they also caused violent regional conflicts. Greece, having had a head start over the other Balkan countries was able to build up a more diversified economic and social structure.

Nationally the Slavic peoples of Yugoslavia and Bulgaria have gravi-

tated toward Mother Russia, whereas the Greeks felt themselves part of the Mediterranean civilization, which is the cradle of Western civilization. Conflicting ethnological theories about the origin of the Rumanian people reflect its intermediary and vacillating position between East and West. The one million Albanians, probably remnants of the Illyrian race, owe their precarious independence to the jealousies of stronger neighbors. National ambitions for contested border areas backed up by Great Power politics have kept the Balkan peoples apart from and often inimical to each other. There remain such areas of potential conflict as Macedonia, Southern Albania, Transylvania, Trieste and Thrace which, with sufficient negligence or ill will on the part of the Great Powers, may generate armed clashes in the Balkans. Of the greatest effect upon the future development of the Balkans, both politically and economically, will be the extent to which Soviet Russia expands its political and economic influence.

Problems of Agriculture

The main economic characteristic of the Balkans is the predominance of small peasant farming with extremely low yields per person and acre. While one peasant in western Europe produces food sufficient for four persons, the Balkan peasant grows only enough to feed one and a half persons. Due to the high birth rate, the splitting up of farms by inheritance, and the lack of a manpower outlet into industry, the agricultural land is overcrowded. The agricultural area per head of the agricultural population is not more than 3.2 acres in Rumania and Yugoslavia and 2.5 acres in Bulgaria, compared with over 5 acres in Germany and France. A prewar analysis of Bulgarian agriculture came to the conclusion that one-third of the manpower employed in agriculture could be withdrawn without reducing production. Moreover the population of the Balkan countries is rapidly increasing. One may expect a gradual decrease of the high birth rate, which however, will at least be compensated for by a reduction of infant mortality due to the improvement of sanitary conditions. The present population on the territory administered by each country in 1945 is estimated according to war losses, territorial changes, and population movements. The population expected in 1955 is estimated on the basis of the prewar rate of natural increase.

THE POPULATION OF THE BALKANS
Estimated on the basis of present territory

	1945	1955
Albania	1,050,000	1,100,000
Bulgaria	6,700,000	7,300,000
Greece	6,900,000	7,800,000
Rumania	15,800,000	17,400,000
Yugoslavia	14,300,000	15,900,000

Thus one has to envisage a continuously growing population pressure, especially on the farms, or in other words, a rapidly growing potential labor force.

The Balkan peasant cultivates his small piece of land with antiquated techniques and insufficient capital. Unselected seed, lack of fertilizer, and the practice of soil-exhausting crop rotations result in a meager yield. The backwardness in agriculture can be measured at the rate of fertilizer consumption.

Wheat yields in the Balkans, with practically no fertilizer applied, range from 12 to 17 bushels per acre, as compared to 22 to 44 bushels in northern and western Europe where heavy fertilization is the rule. A low income is the inevitable result of poor yields on very small farms.

Livestock holdings per acre were small in comparison to western European standards; moreover an abnormally high proportion of the livestock were draft animals and the milk yield of dairy cattle was only half of that obtained in Denmark. In Yugoslavia, mechanical equipment per acre was but 5 per cent of that available to German agriculture and the corresponding ratio for Rumania was even less. 38 per cent of Yugoslavia's peasants were still using wooden plows prior to the war. In Rumania and Yugoslavia cereals formed the peasant's main diet and simultaneously the countries' main exports. In between the two world wars Bulgaria developed the raising of industrial crops for export to a considerable degree, whereas Greece, always an importer of grains and an exporter of high value specialty products such as tobacco, sultanas and raisins, was driven by the Great Depression into an expansion of wheat cultivation. During the late thirties a similar reorientation of agricultural production toward industrial crops began in Rumania and Yugoslavia under Nazi pressure.

In all these countries there is practically no land which could be given to the small peasants by cutting up big estates. In Rumania a land reform is now underway which divides the medium estates for the benefit of the sharecroppers and small peasants, with the probable result that for a couple of years the yield per acre and hence total output will be substantially reduced. In Rumania and Yugoslavia a way of satisfying sharecroppers and dwarf peasants is being found by distributing farms confiscated from German national minorities and from *"enemies of the State."* Though that may relieve political pressure, it does not advance agricultural reform. War destruction, on the other hand, is providing one important stimulus to improvement. The losses in draft animals have been extremely heavy in most Balkan countries. Immediate replacement of draft power can only be found in tractors. The higher cost and efficiency of the tractor suggests its use in co-operative farming. Hence tractor stations for co-operative use are being introduced in parts of Rumania, Yugoslavia and Bulgaria. Replacement of animal by mechanical power will leave more fodder and pasture land for

productive livestock and should also induce the co-operative purchase of modern agricultural equipment, together with a change in the labor-wasting strip system of farm plots. Other improvements suggested by agricultural experts are improved crop rotations which include fodder and root crops, the use of better seeds, irrigation and drainage, soil conservation, better breeding animals, increased dairy farming, expanded production of vegetables, fruits, and industrial plants, scientific marketing and, last but not least, rural education. During the immediate postwar years there will be no trouble in marketing grain crops since Balkan surpluses will be very much reduced and Soviet Russia is absorbing large quantities on account of reparations and for occupation troops. In three to five years, however, the grain surplus of the Balkan countries would approach normal, if no structural changes should have occurred meanwhile. By then the German market should be lost, if the policy of de-industrialization and of agricultural intensification of Germany were realized, which implies lowered purchasing power and consumption standards. The present problem of agricultural reorientation of the Balkans thus involves a most difficult estimate of the absorptive capacity of eastern Europe and of Russia five years hence and of the possible opening of new markets in the Mediterranean area. Increased sales of protective foods depend upon the raising of the living standards and the improvement of the diet of the receiving countries. In as much as the living standard of Germany is to be lowered, that of the alternative markets would have to be raised in order to provide the necessary consumption. These potential customers, however, will be in the process of rehabilitating their own industries, homes and railways, which means that they will have to spend a considerable share of their national income on investments. Hence, additional markets for agricultural products can only be secured if the potential customers are not going to sacrifice consumption standards for the sake of investments.

The Need for Industrialization

Reorientation and improvement of agricultural production alone will not solve the problem of poverty in the Balkans. The Balkans are poor because the productivity per head is low, and the productivity is low because of the very limited industrial development. The manpower unused on the farms, which represents perhaps one-third of the working farm population or one-fourth of total manpower in all Balkan countries except Greece, and the natural increase in population must be placed in industrial production and distributive services, and provide more purchasing power for more intensive farm production. The convulsion of the second World War has shattered many traditional barriers which prevented radical change. Warfare itself has demonstrated to the simplest peasant the superiority of mechanical equipment over the horse and buggy. Formerly the sturdy

peasant son was considered the best soldier; today the skilled worker and engineer is the backbone of the army and, in the eyes of Balkan peoples, the army embodies the nation. Thus it is no wonder that the new governments emerging from the war have adopted the slogan of industrialization and that during the Nazi occupation, some technicians and economists have secretly dwelt on long-term industrial planning.

Virtually all these plans center around a program of electrification. Shortly after the expulsion of the Nazis from Sofia, the Bulgarian Kalburoff declared: "Today electrical energy is the basis of social revolution," and six months later the same engineer presented to the public a detailed fifteen year plan of electrification for Bulgaria. A group of Greek experts have drawn up a plan for the development of hydroelectric power in Greece, and the Yugoslav Government is known to consider various power projects. Before and during the war the Rumanians have studied, with German assistance, the utilization of their large sources of water power. It is well realized in those countries that such ambitious projects can only be implemented with the help of foreign capital but it is equally understood that the dearth of other sources of power, except in Rumania, and the desired decentralization of the power use makes the generation of hydroelectric energy a pre-condition of progressive industrialization.

Potential wealth is transformed into actual wealth only by human skill. All the ores in the Balkan mountains and all the water behind the dams remain valueless as long as the people do not acquire the required skills. Therefore any industrialization and electrification program has to start with the technical training of a sufficient number of foremen, engineers and managers. Since advanced technology does not exist in the Balkans and technical schools are insufficient, the first prerequisite is the training of a technical vanguard of well qualified men from the Balkans in the United States, Great Britain and Russia. They in turn would have to teach larger groups back home. This educational task would be considerably eased if in the meantime the administrations of the Balkan countries would refrain from "purging" the few available technicians and managers for political reasons, and if foreign skill would be retained or attracted. The tempo of industrialization of the Balkan countries depends as much upon the creation and conservation of technical skill as on the provision of foreign capital.

In Yugoslavia and Greece, which have suffered heavy damages through the war, the industrialization programs will have to be accompanied by and integrated with programs of rehabilitation. In some instances it may be found that rebuilding of old facilities will not serve the purposes of the future. The transportation system of Greece, for instance, is likely to be built up on new lines and principles rather than on restoring every outmoded and uneconomical railway. Similarly in Yugoslavia the highway and truck

may be preferred as feeders for trunk railways to obsolete or demolished secondary railways.

Foreign help in rehabilitation will be most needed in transportation equipment, since capital losses were largest in that field. This includes railways, road transport, ships and harbors. Next on the list of import needs comes the replacement of worn out, destroyed, or stolen industrial and mining equipment. Destruction or removal of plants may lead to the establishment of larger units at new locations as for instance in the case of the Yugoslav steel and aluminum industries. Destroyed harbors may not be rebuilt but replaced by better locations or newly acquired harbors. A large domestic investment but relatively small imports will be required for the repair and rebuilding of houses. In this respect however, every attempt should be made to save labor and material by standardization and new methods in order to maximize investment in manufacturing industries. It is roughly estimated that new methods introduced in the United States during the war should result in a saving of 15 per cent of man-hours required in house construction. For permanent and emergency construction in Balkan countries all new experience gathered in the United States, in Russia, and Great Britain should be made easily available through central organizations.

The United Nations Relief and Rehabilitation Administration is taking care of the most urgent immediate relief needs of food, clothing, and shelter and of a fraction of rehabilitation requirements including the import of some industrial raw materials. That aid is now coming to an end, while large amounts of war damages to physical property still remain to be rehabilitated. What will be needed from abroad above UNRRA shipments, and how much will be required from within the country in the form of labor and materials, can only be guessed very roughly, as indicated later under the heading of "rehabilitation" in subsequent tables. Part of the equipment for rehabilitation may be obtained from German reparations.

Rumania, Bulgaria and Albania suffered only minor losses in invested capital, except for the unpaid balances due on wartime exports to Germany. Insofar as Soviet Russia should remove capital goods from Rumania as reparations or as so-called "German assets abroad," an equivalent amount would have to be added to Rumanian capital needs. Reparations and supplies for Russian occupation troops in the form of raw materials and foodstuffs reduce the amount available for investment in Rumania and Bulgaria. The share of the national income needed for rehabilitation and industrial investments is considerably lower in these two countries than in Yugoslavia and Greece, as shown in Table II.

The future demands upon transportation will increase with the growth of economic activities. Prewar railways, however, could carry a certain ad-

ditional load. Processing of farm products and ores nearer to the point of production, and partial substitution of electrical power for coal will reduce somewhat traffic in such bulky raw materials. At the same time traffic in the more valuable semi-finished and finished products will increase, but such products can also be hauled economically by truck. Rehabilitation of transportation in Greece and Yugoslavia has been started by UNRRA. Additional equipment will be needed by all Balkan countries but it is not yet possible to estimate the cost involved. Whereas the repaired railways, by and large, may suffice for the next decade, there is an obvious need for new and better roads in all Balkan countries. In the Balkans there are only four miles of road for every mile of railroad, whereas there are fifteen in France and twenty-one in Denmark. Especially the secondary roads have to be improved and expanded and, in general, the upkeep has to be systematized. Once industrialization is absorbing the surplus labor, the labor used in road building should be reduced by the importation of modern road building equipment.

A Ten-Year Program of Electrification and Industrialization

The main emphasis in planning the economic future of the Balkans must be laid upon industrialization. Following is the broad outline of a maximum program of industrialization on the basis of electrical power during the next ten years. For that purpose projects developed in the Balkan countries were taken into consideration, but in general this plan is the result of the author's research. It proceeded from an analysis of the natural resources and of the industrial capacities to a comparison of the economic development in advanced European countries, and checked maximum potential investments against the limitations of the national investment rate. Foreign investments were assumed to be no limiting factor but would be forthcoming at a low interest rate. Within these circumscriptions it is a theoretical maximum program which does not pretend to foretell what is going to happen but what could be achieved economically under favorable political conditions.

Electrification

The five Balkan countries contain large undeveloped sources of water power, rather limited deposits of brown coal and lignite, and virtually no hard coal. Rumania has oil fields with a declining output and produces methane gas on a rising scale. Albania and Yugoslavia produce small quantities of mineral oil. Annual electricity consumption per head amounted to 4 KWH in Albania, 24 KWH in Bulgaria, 35 in Greece, 62 in Yugoslavia, and 63 in Rumania compared with 995 in the United States and 875 in Germany. Around one-third of the fuel consumption of Bulgaria, Greece, and Yugoslavia and about one-fourth of the Rumanian fuel consumption consisted of wood used for fuel, a considerable part of which should be

more rationally used. Greece, poorest in fuels among the Balkan countries, had to import about 1,200,000 tons of coal and oil per year. Thus electrification plans have to be based primarily on water power with auxiliary thermal plants utilizing brown coal or, in the case of Rumania, also methane gas. The major sources of hydraulic energy have been surveyed and a number of projects are ready in all countries. The largest power potentials are located in border areas—one at the Iron Gate between Rumania and Yugoslavia, the other at the Prespa and Ochrida Lakes between Greece, Albania, and Yugoslavia. In each case international institutions would have to be set up for financing and administering. Such inter-Balkan enterprises on the TVA model might be conducive of good will and further co-operation across the national frontiers, but they are not likely to be undertaken right away. Immediate projects probably would be located at the Drina and Drava Rivers in Yugoslavia, the Acheloos and Aliakmon Rivers in Greece, the Rossitza, Topolnitza and Pesachnik Rivers in Bulgaria, the Bistritza River in Rumania, the Devoli River in Albania.

Industrial Uses of Power

The pattern for the future consumption of electrical power is given by the existing industries of the countries and the anticipated development of new and old industries, which are going to process native raw materials and agricultural products up to a semi-finished or finished stage. Similar to the early steps in other backward countries, the textile industry was the first to grow to major proportions in the Balkans and what remains to be accomplished is mainly the balancing of the insufficient spindle capacity with that of the looms, and possibly the establishment of rayon factories. Following the usual sequence of industrial expansion, the next industries to be started or expanded in the Balkans would be iron and steel and the metal industries. Yugoslavia and Rumania should considerably increase their already existing iron and steel industries with the help of cheap electricity. The manufacture of hardware, of agricultural implements, of railway equipment, of leather and shoes should be further developed. The production of aluminum for domestic needs should be undertaken in Yugoslavia, Greece, and Rumania, where rich bauxite deposits are available. Copper, lead, zinc, and chrome ores should be smelted and refined close to the mines. From the point of view of mineral wealth Yugoslavia is richest among the Balkan countries, followed by Rumania, Greece and Albania, whereas Bulgaria possesses only lead-zinc ores.

Large industries should develop on the basis of the rich forests, which exist in all Balkan countries except Greece. Aside from building lumber, ties, pit props, and furniture, the production of pulp, paper, plastics and the distillation of wood should grow to considerable proportions. The intensification of agriculture will require the establishment of large nitrate

plants. Other chemicals which should be produced in increasing quantities are sulphuric acid, soda ash, copper sulphate, carbon black, glues, varnishes, alcohol, zinc and lead oxides, aluminum sulphate, chromium salts, glycerine, insecticides, essential oils and pharmaceuticals. The processing of foods and industrial plants is likely to develop on a considerable scale, adding value to the products of the soil. Irrigation projects in the Danubian plains and in Greek Macedonia will go along with electrification improving and stabilizing the yield of agriculture.

Finally with the construction of a wide distribution net, electricity would enter the peasant home and allow the use of modern appliances and a higher output of home industries. In the estimate of the use of power after a ten years development of all natural resources (given in Table I), the electrification of railways is limited to mountainous stretches except for Greece where the lack of domestic fuels makes general electrification advisable. In the other countries the available fuels and railway equipment should continue to be used for the benefit of a faster industrialization. No detailed estimates are presented for Albania, since information on projects and possibilities are insufficient.

TABLE I
ESTIMATE OF MAXIMUM ANNUAL POWER NEEDS IN 1955
(in million KWH)

	Yugoslavia	Rumania	Bulgaria	Greece
Street lighting	70	70	35	50
Household and private lighting	600	600	300	400
Agriculture	200	200	100	100
Irrigation	200	200	100	200
Railways	100	0	50	200
Flour mills	100	100	50	30
Water and sewerage	50	50	25	50
Cement	100	100	50	50
Paper and pulp	150	150	75	0
Sugar	20	20	10	0
Textile	200	200	100	100
Fertilizer	580	440	160	90
Other chemicals	300	200	65	150
Other manufacturing ind.	300	300	150	300
Iron	930	460	0	0
Steel	200	100	0	0
Copper	20	0	0	0
Lead	320	35	85	45
Zinc	80	15	40	25
Ferro chrome	280	0	0	110
Aluminum	625	625	0	410
Total	5,425	3,865	1,395	2,310
Total incl. waste	5,967	4,251	1,535	2,541
Power already available	1,500	1,100	330	530
Total Additional Need	4,467	3,151	1,205	2,011

These figures envisage a maximum development, which would lift the Balkan countries to an industrial level not far below that of prewar Italy. It could only be achieved within one decade with perfect organization and optimum use of all human and material resources, in other words, without waste through inefficiency or heavy military burdens. Most of all, it depends upon full support being lent by the advanced industrial countries, especially the United States, in the form of cheap long-term loans for the purchase of industrial equipment. Long-term loans, whether private or public, presuppose confidence in the institutions and aims of the debtor country and a mutual relationship of trust and respect.

Cost of the Program

The costs of these maximum programs are very high. Undoubtedly they surpass any similar undertakings in the past and can be considered only within the frame of a world-wide integrated effort at maximum production and consumption. Domestic investments needed in the Balkans would aggregate \$2,300,000,000 and investments from abroad, \$4,300,000,000. Equipment transferred from Germany as reparations may make up a small part of the total. In fact, the de-industrialization of Germany must have as its necessary complement the industrialization of southeastern Europe, if a new balance of the European economy is to be obtained.

The breakdown of total investment requirements is given in Tables II and III. These calculations are based on a number of rough estimates. For instance, it is assumed that one KW installed capacity will produce 4,000 KWH yearly, a high rate only obtainable in a well balanced power economy. The average investment cost per KW is estimated at \$160, of which 40 per cent would go for imported equipment. The cost of the distribution net is set at two times the value of the power plants minus existing facilities. Four-fifths of that cost would be required in equipment, which would have to be bought abroad. Investments in manufacturing industries are estimated at four times the total investment in old and new power plants and distribution, but deductions are made for the industries already existing. It is assumed that two-thirds of the investments in manufacturing industries will have to come from abroad. In the case of Rumania \$300,000,000 was added for investments in the oil and natural gas industries, since their further development is an essential part of the general industrialization plan. In Albania it was assumed, for lack of more concrete details, that the consumption of electricity per head would be brought on a level with that of Greece.

The share of the national income required for this program of industrialization varies between 4 and 8 per cent as shown in the last column of Table II. However, it must be observed that national income statistics of Balkan countries are not too reliable and that the conversion of national

TABLE II
ESTIMATE OF REQUIRED DOMESTIC INVESTMENTS
(in million dollars)

	Electri- fication	Industri- alization	Rehabil- itation	Total	Per Year	Prewar national income*	Per cent of prewar national income**
Greece	70	270	100	440	44	550	8.0
Bulgaria	48	192	10	250	25	545	4.6
Yugoslavia	158	570	170	798	79.8	1,224	6.5
Rumania	113	607	20	740	73.0	1,852*	4.0
Albania	16	57	5	78	7.8	n a	n a
Total	405	1,696	205	2,306	23.1		

* Prewar national income reduced by estimated 14% for areas ceded to the Soviet Union and Bulgaria. Population in ceded areas represented 21% of total population of prewar Rumania, but their income level may have been 35 below the average.

** Needed for rehabilitation purposes.

currency figures into dollars at the official rate of exchange, which is used here, does not reflect the somewhat higher internal purchasing power of the national currency, so that the investment might require a smaller percentage of national income. The maximum amount of national income in the Balkan countries which can be devoted to investment may be around 12 per cent. Hence a sufficient margin would be left for the necessary investments in roads, housing and agriculture which are not included in our estimates. Although during the immediate post-war years national income of the Balkan countries may be considerably smaller than before the war, thereafter the projected investments and the resulting full use of labor should rapidly lift the national income above the prewar level.

TABLE III
ESTIMATES OF TOTAL INVESTMENT FROM ABROAD
(in million dollars)

	Electrification	Industrialization	Rehabilitation	Total
Greece	120	550	200	870
Bulgaria	96	384	—	480
Yugoslavia	274	1,130	300	1,704
Rumania	194	913	—	1,107
Albania	32	113	—	145
Total	716	3,090	500	4,306

To make this program feasible, the exporters of capital goods would have to invest yearly \$430,000,000 in the Balkan countries. In addition, credits would have to be provided for steadily rising imports of raw materials such as cotton, wool, hides, rubber, and chemicals, because Balkan exports are likely to lag behind imports during the initial phase. Should the Balkan countries be integrated into the Soviet economic system, the bulk of the investments probably would have to come from that area.

The Impact of International Policies

At the present time, it is generally felt in Balkan countries that the Soviet Union, due to her own investment needs, will not be able to engage in projects of such magnitude; moreover, it is feared that the Soviet Union will prefer industrialization of the Transural region to heavy investments on the western rim of her wide realm. Soviet policy in Rumania, under the regime of reparations and restitutions, far from encouraging industrial output, acts as a continuous drain on capital resources, nor does the Soviet attitude toward foreign trade between controlled Balkan countries and western nations encourage hope for a free flow of goods. Hence large-scale industrialization might be delayed for decades, should the Balkans remain an exclusive zone of Soviet interest. On the other hand, the Balkan countries will have to find markets for part of their export goods in Soviet-controlled eastern and central Europe, even though broader outlets than before may be opened in the Mediterranean area, in western and northern Europe, and in the Americas. If the decline of German consumption and production is not to leave an economic vacuum in Europe, it must be compensated for by a rapidly expanding economy in other European countries.

Thus, it appears that our theoretical maximum program of industrialization could only be accomplished if West and East make it a joint enterprise; if both sides co-operate in a new experiment for human betterment. Today as before, the Balkans are among the regions of the earth which would suffer most from closed trade systems or mutually exclusive economic blocs. Economically, they would be frozen in their state of backwardness, which the pressure of a growing population would turn into progressive poverty. Politically, they would be situated in the center of tension, where warfare considerations prevail over welfare economics. Now, as formerly, the Balkans are not able to extricate themselves from a log jam created by history and geography.

If the strong fight, the weak perish. If the strong co-operate, the weak profit.

CHAPTER X

UNION OF SOVIET SOCIALIST REPUBLICS

by E. C. ROPES

INTRODUCTION

In any attempt to forecast future developments in any field in the Union of Soviet Socialist Republics, within its new post-war boundaries, the governing consideration is the fact that for twenty-five years the country has been the scene and testing-ground for a planned socialistic economy, managed by a comprehensive government bureaucratic machine, and directed by a closely knit, rigidly controlled political organization, the Communist Party. During the period before and during World War II, the fundamental policies of that economy have been in the main stabilized. In looking toward the future it is only necessary to estimate the further application and operation of the policies already adopted by the government and accepted by the people, the great majority of whom see in those policies a realized improvement in their general condition of life, and count on a further improvement over the years. The slogan of the fourth Five Year Plan, scheduled to run from 1946 through 1950, is "Overtake and pass the United States industrially." It is not necessary that this goal should be reached in the period named. The hope, based on actual national accomplishments prior to the war and during that all-embracing struggle, may be expected to maintain its strength and fervor during the difficult years of readjustment and return to the normal conditions of life and growth. These conditions are already known from experience, and the methods are supported by a constantly greater proportion of the population.

CHARACTERISTICS OF SOVIET ECONOMY

Industry

The application of the planned economic policies now characteristic of the Soviet state had produced before the war a definite pattern, in which industry, agriculture, education, social developments, and even the arts had acquired a specific form and contributed their share to the aggregate picture. The emphasis since 1917 had been placed on industrialization, first with the purpose of breaking down the dependence of the country on for-

eign investment and management in the development of the country's resources, and next with the purpose of defending the Union against foreign aggression. The attention of the government planners was directed principally toward the organization of industry on a socialist basis.

From the beginning the greatest reliance was placed on electrification as the most modern and efficient source of power; and electricity has continued to be the keynote for industry, and a convenient aid to progress in agriculture. Even more fundamental than electrification, however, was the theory introduced earlier in Russia but never applied on so complete a scale before, of State ownership of all natural resources and State responsibility for their exploitation, for the benefit of all the Russian peoples.

The Academy of Sciences, in 1917 already nearly two hundred years old, was given an assignment that channeled its energies in a new direction to explore and investigate all the natural riches of the country, wherever they might be, as the first step toward developing these riches for the nation. With a blueprint of constantly expanding mineral and other raw material supplies before them, Soviet planners could chart in detail the industrial installations, power developments, railroads and waterways, roads and airlines, necessary to the continuous expansion of the industrial production of the Union. The Soviet scientific research program, government controlled, inspired, and financed, which begins with the Academy of Sciences at the top, percolates downward and outward to affect every branch of the national economy. Based on a solid foundation of technical education beginning in high schools and running through hundreds of universities, research culminates in schools and laboratories of pure science like the famous Kapitsa physics institute and a network of industrial institutes where the problems of industry are studied. The Academy itself has numerous branches in different republics, which bind together the center and the outlying areas. Interconnection and co-operation between State and industrial institutes, and among institutes in the various industries, are close and continuous, in order that useful discoveries may be shared by all. A special place is occupied by the agricultural institutes, at least two of which have a record of over one hundred years of work. Under Soviet encouragement, these institutes and their experiment stations play a vital and always progressive part in the development and expansion of agriculture over the vast areas of the Soviet Union.

Both industrially and agriculturally the U.S.S.R. may be said to rest, or rather to grow, on a foundation of applied science, built and strengthened by the Government for the benefit of all the people of the Union. It is impossible to exaggerate the importance of scientific research in preparing and executing the successive Plans. But it may be illuminating to know that whereas in 1938 all our American expenditures on such research, both federal and private, aggregated only some \$300,000,000, in the Soviet Union

the federal budget of 1944 assigned \$2,000,000,000 to this work (at the official exchange value of the ruble), and an additional \$8,800,000,000 for training scientific specialists and research students.

It has been difficult for Americans to appreciate the tremendous progress made in the Soviet Union under the three Five Year Plans, from 1928 to 1941, because of the failure of the Soviet government to publicize abroad the record of its own achievement in that period. Yet the story was fully told to the Russians, and while space will not permit a detailed account of developments, the high lights may well belong in this short chapter.

During the first Five Year Plan, and to a lesser extent under the second, the emphasis was deliberately placed on production goods, particularly for heavy industry. Coal mines, ferrous and non-ferrous metals mines, smelters, blast and steel furnaces, and the chemical and transport equipment industries, were assigned most of the budget appropriations and man power. In the first period the manufacture of tractors, combines, cultivators and other farm machinery necessary for large scale collectivized agriculture rose rapidly, and production of new types of locomotives and freight cars developed from American models increased greatly. The output of electric power was tripled. Coal, oil and gas were nearly doubled, and production of such basic industrial products as pig iron, steel, and chemicals increased between 50 per cent and several fold. Output of many consumers' goods, such as cotton, wool and textiles, actually declined, although a substantial start was made in the production of automobiles. (Note data in Table 1.)

In the second Five Year Plan, the promise of greater supplies of consumption goods, and of comforts and even luxuries for the population, began to be realized. Although the production of basic heavy industrial products was generally doubled during the second five years, consumer goods such as textiles, shoes, and sugar increased 50 per cent or more. Output of many light goods for consumers—sewing machines, watches, cameras, radios, phonographs and records, pianos and other musical instruments, bicycles, and household electrical appliances, increased from 100 per cent to tenfold. Textiles and clothing, boots and shoes, furniture, household goods and appliances, thus appeared in constantly growing quantities. As Stalin said, "Life became more cheerful" after the almost continuous belt-tightening that had characterized the previous twenty years. Collectivized agriculture had been accepted, and there was an abundance of basic foodstuffs, more meat than at any time since 1918, and an increasing supply of cotton, flax, oil-seeds and other industrial crops.

The original Soviet planning was on a country-wide scale, with huge federal plants and even industrial cities rising from the desert, as at Magnitogorsk. But with the discovery of new mineral and metal deposits and fuel reserves in almost every section of the Union, a second directive was added, to plan for the development of smaller units utilizing local materials, ex-

TABLE 1

REALIZED INDUSTRIAL OUTPUT UNDER FIRST AND SECOND FIVE YEAR PLANS

Product	Unit of measure	First 5 years	Second 5 years	
		1929	1933	1938
Fuel and Power:				
Electric power	Billion KWH	6.2	16.4	39.6
Coal	Million metric tons	40.1	76.3	132.9
Petroleum and gas	" " "	13.8	22.5	32.2
Basic Products for Heavy Industries:				
Pig iron	" " "	4.0	7.1	14.6
Steel	" " "	4.9	6.9	18.0
Rolling mill products	" " "	3.9	5.1	13.3
Chemical products	Billion roubles	0.6	2.3	6.7
Cement	Million metric tons	2.2	2.7	5.7
Industrial Consumers' Goods:				
Paper	Thousand metric tons	385	506	834
Cotton textiles	Million meters	2,996	2,732	3,491
Woolen textiles	" "	101	86	114
Footwear (other than felt and rubber)	Million pairs	49	99	213
Sugar, granulated	Thousand metric tons	1,283	995	2,520
Fish, catch	" " "	956	1,303	1,560
Transportation Equipment:				
Automobiles	Thousands	1.4	49.7	211.4
Main-line locomotives, units of E. & S.U. types	Thousands	0.6	0.9	1.6
Freight cars, 2-axle units	Thousands	15.9	21.6	49.1
Farm Machinery:				
Track-type tractors	Thousands	0.2	2.1	32.2
Tractor plows	Thousands	3.6	67.2	72.8
Tractor cultivators	Thousands	1.6	19.5	64.8
Grain combines	Thousands	—	8.6	22.9
Finished Consumer Goods ¹				
Sewing machines	Thousands	1	266	503
Watches	"		103	635
Radio receiving sets, tube	Thousands		22	202
Phonographs	Thousands		99	844
Phonograph records	Thousands		2,122	66,798
Stringed instruments	Thousands		646	2,206
Electric lamps (up to 50 watt)	Millions		46	82
Electric flatirons	Thousands		181	484
Electric teapots	Thousands		74	188
Electric plates	Thousands		7	297
Bicycles	Thousands		132	386

¹ No data available for 1929, but production of these consumer goods was negligible at that time.

cept where reserves were so large or so difficult to exploit that federal aid was needed. Beginning with cement plants by the hundred, this movement to make each district or locality independent of long-haul deliveries of materials and fuels has spread steadily eastward, to the Urals, the Kuznetsk

region, to Baikal and beyond, even to the Pacific, where Komsomol'sk, a new steel town, proved its value in wartime. Incidentally many old, antiquated plants, as at Petrovsk-Zabaikalsk, were modernized, and old mines, long worked, were re-equipped for larger output.

Ever since 1921, with the foundation of the GOELRO (State Division for the Electrification of the R.S.F.S.R.) the application of electricity to the industrial and domestic life of the Soviet Union has been a thread of light and power illuminating the Russian "dark villages" and galvanizing into activity the backward industry of the Tsars. Possessing the world's greatest reserves of water power, Russia was the least developed with respect to its potentialities. Even kerosene was a luxury outside of the cities, and the promise of the "Lenin lamp" seemed an unrealizable dream.

The application and expansion of the development and use of electricity have been the keynote of Soviet industrial and social progress. The growth of the electrical machinery industry, the spread of central, plant and local power-stations, and the interconnection of all power units into district networks or grids, represent one of the most successful aspects of Soviet industrial growth. Volumes have been written on the subject in the Soviet Union, yet the story has never kept pace with the facts of growth. Even in wartime, and in spite of destruction, power production continued to be a center of attention. It may well be that the total capacity of Soviet electric stations, large and small, is already greater in 1945 than that reached before the war. As the wrecked power-stations are restored, the gigantic Dneproges station is rebuilt and new American machinery is installed, and the new Central Asiatic and Siberian stations reach their full planned capacity, the Soviet Union will take further strides along the road toward complete electrification of urban and rural life and work.

It is worthy of note that while the whole story has not yet been written, it is already obvious that the wartime production of the Soviet Union was turned out chiefly by plants that either did not exist in 1930, or were comparatively small units in the Urals and east of the mountains. Evacuation of whole plants from the west, and later new construction and intensive development of old and recently discovered reserves, and the great expansion of the Ural electric power output, gave the Union greatly increased munitions manufacturing capacity. This was sufficient, with considerable help from its Allies, to equip and support its multimillion army, which ultimately surpassed even the Germans in the aggregate quantity and variety of its military equipment.

Agriculture

Soviet planning in its earliest years, was extended to include agriculture also, as an indivisible part of economic life. Here the problem was simple

to formulate, but difficult to implement, because of the intensely individualistic character of farming in Russia, and the opposition of the peasants to the regimentation required under any collectivized system of agriculture. While, therefore, the acceptance of government direction and pressure in industry was comparatively painless, the opposition to the application of the same principles to farming was violent and did not cease for several years. The emphasis in government policy later shifted from compulsion to persuasion, from penalty for non-acceptance to reward for "playing ball" according to the new rules. This resulted by the late '30's in general adoption of the collective system of farming, whereby individual farmsteads were brought together into "Kolkhozy" (collective farms), formed and managed along uniform lines, and promising many advantages to their members which, under the new laws, they could not achieve as individuals. For the surrender of the right of personal ownership the peasants received security, a living income and the prospect that all could, and if they followed the rules, would, steadily raise their standard of living. This lesson had been previously learned from experience with co-operative societies, with the "Zemstvo" local government agencies, and of course with the "Mir," though the last institution was a brake on progress, while the others assisted growth.¹ As soon, therefore, as the peasants realized the possible benefits to themselves of the new collectivization of effort, resistance to its acceptance declined, and by 1940 it was in effect throughout the land, supported by 99 per cent of the rural population.

In its long campaign to introduce collective farming to the people, the Soviet government relied at first on sheer compulsion, which was resisted by practically all the peasant body. Wiser councils prevailed after the early failures, and new policies and methods of approach were adopted. The collective farm "charter" of 1935 lays down the principles of collectivization, but in addition to the duties, it also enumerates the privileges and rewards of the individual member of the collective, and they are important and valuable. In return for devoting part of his working time to work for the collective, the peasant receives a house, a garden-plot, and security based on the earnings of the collective, for life. The harder and more intelligently he and his fellows work the better is his condition. Even in wartime his basic living needs were more nearly covered than those of the industrial population. The latter could hardly have survived if they had not adopted a collective farming system of their own, in the form of extensive Victory and factory truck-gardens outside of the old and new cities, where each worker raised all he could and added it to the common pool.

¹ The "Zemstvo" was the local self-government unit after the freeing of the serfs. Together with the co-operative organizations, it kept Russia going during most of World War I. The "Mir" was the local village government, which divided up the land into individual plots or strips each spring.

The Soviet government, in its capacity of initiator and director of the agricultural development of the country, as it is of the industrial, has followed the same policies that have proved successful in the industrialization of the country. For agriculture these included improvement and expansion of crops, utilization of local opportunities, and guidance of effort. Constant research and investigation, study by government institutes and experiment stations, with favorable developments promptly made available to all; soil improvement, irrigation, exploitation of mineral fertilizer resources, acclimatization of new crops in undeveloped areas—these are only a few of the forward steps taken in the continuous effort to increase the food production of the country. Under government tutelage, improvement of livestock, quantitatively and qualitatively, has never ceased: every collective farm is instructed and assisted in raising its own meat, dairy products, poultry and other animals. The supply of textile and other industrial crops has been steadily increased, and the area of planting of such crops steadily expanded eastward; acreage of sugar beets, potatoes, and even flax east of the Urals replaced a large part of the area planted with these crops that was lost to the Germans between 1941 and 1943. From now on expansion of planting will be continued, to supply the greatly increased population of the Asiatic provinces of the R.S.F.S.R.

Perhaps the most successful application of government investment, engineering skill, and construction voluntarily participated in by the local peasantry has been the rapid expansion of irrigation in the central Asiatic cotton belt, where crops grow in quantity and improve in quality each year, and where the development of hydroelectric power has made possible the erection of textile mills and the exploitation of unrealized mineral resources. The changes in some fifteen years, initiated against violent opposition from all but the poorest of the native tribes inhabiting this area, have amounted to an industrial revolution, the benefits of which to the local population are already evident, and to the country will constantly increase.

With the expansion of agriculture has gone a planned increase of the foodstuffs industry, beginning with canneries and packing plants, and steadily widening in scope. Fruit, vegetables, dairy products, meats and meat products, are produced in larger quantities and greater variety. Here again the war accelerated a movement eastward, and the growth of Siberian cities that were old agricultural centers. A special chapter might be written about the planned modernization and expansion of the oldest native Russian industry, fishing—now become a highly organized, well equipped collective industrial machine, which during the war trebled its Pacific record to replace the fishing-grounds in the White and Barents Seas which were cut off by enemy sea-power. The disappearance of Japanese competition in the Pacific opens the way for still further expansion of Russian fisheries along the Pacific shores.

SOCIAL ORGANIZATION

The basis of the Soviet social organization is, of course, the classless society, imposed by the Revolution, and calling for the elimination of all classes existing in Russia in 1917. The civil war which followed the application of this drastic policy cost many lives. The social revolution, completed earlier in the cities, was not fully accepted in rural districts until the completion of the collectivization of agriculture. The guiding role of the Communist Party, itself changing in character as time passed and socialistic ideas became more practical and generally accepted, has been outstanding in spreading these ideas and making them work. One of its most successful accomplishments has been the promulgation of the successive Plans, bringing them directly home to the people, and procuring the participation of every individual in town and country in their execution. This phase of Party work was evident particularly in the war, the final outcome of which was achieved by universal acceptance of total war in the broadest sense. The gold-miner at Kolyma and child-shepherd in central Asia had the same feeling of personal responsibility for the fight for the Motherland that was felt by the Leningrad worker or the front-line soldier at Stalingrad.

Education

Perhaps the strongest appeal of socialism as a new theory was its program of universal education, always a policy of all liberal Russians, but resisted by almost every Tsar as undermining the authority of the autocrat. The change in this field was radical, and the policy has remained a basic one, limited in its execution only by the physical impossibility of providing schools and books at a rate commensurate with the demand. The few class distinctions that remained as an aftermath to the civil war were outgrown and abolished by 1936. While high school and higher education is no longer free of cost to the pupils, every child gets from 7 to 10 years of schooling above the pre-school level, and deserving scholars can always obtain scholarships even in colleges and universities.

During the interwar years, the spread of schools was remarkable, and by 1938 there were 11,000,000 children in high schools and 607,000 students in colleges. During the war special schools for short-time, intensive training were established, superimposed on the factory schools that had functioned successfully previously. The graduates of these schools went directly into industry and transport, and made a large contribution to the war record. Facilities for upgrading in factories and for training tractor and combine operators in agriculture have long been available, and have steadily expanded.

Equality of opportunity for all, which existed in very limited measure under the Tsars, has undoubtedly been demonstrated under the Soviet gov-

ernment at its best in the field of education. Even the Nienty on the Arctic shore, or the Buriat-Mongols near Lake Baikal, may now learn their own language from new alphabets, may record their own legends and history, and as industry spreads, may train for work in factory or mine.

In no other part of society is the effect of universal education more obvious than in the Red Army, where in addition to military subjects, training is provided that develops initiative, teaches direction and management of men, and inculcates a sense of duty and responsibility. Already officers and men, demobilized, have become presidents of collective farms and leaders in social improvements. Discipline, knowledge and aroused social sense make these men valuable spearheads in the difficult post-war years, particularly in the villages from which they come and to which they return to realize the goal of their struggle, the restoration and upbuilding of their Motherland.

WARTIME CHANGES

The second World War brought many changes in the Soviet Union, not so much in the theory and practice of socialism or the application of the Plan to the economy, as in shift of emphasis from the west to the east, from the European part of the Union to the Asiatic. This transfer of effort was due, of course, to the German occupation of the Ukraine and other western regions, and to the necessity of replacing the industrial and agricultural production thus lost by new production in the Urals and east of this range. The general aspects of this eastward migration are sufficiently known to make it possible to consider some of the overall effects, from the standpoint of industry, agriculture, and society.

Industry

As previously pointed out, the eastward transfer of industry, now concentrated on production for war, was immediate and so far as possible complete, probably starting even before June 22, 1941. For ten years before that date, systematic investment and exploitation of resources in the Urals, from north to south, and east along the Trans-Siberian railroad to the Kuznetsk coal field, had been increased under each Five Year Plan. To the old plants evacuated with their workers from the west were soon added new war plants. Expansion of all, in capacity and production, followed from 1943 on. An abundance of coal at Kuznetsk was supplemented, for the Urals, by old mines reopened and even charcoal furnaces relighted; the intermediate field at Karaganda was rapidly expanded; and explorative drilling brought many new oil wells in the Second Baku into production. Iron and iron pyrites deposits were revived and worked more deeply, and production of non-ferrous metals soared, particularly of aluminum at Kamensk and of copper at Balkhash.

Housing construction to accommodate the influx of war workers, both local and evacuated, lagged at first behind factory building. Up to the end of the war there was no opportunity to develop the war-inflated cities in Soviet ideal style, with cultural, educational and other facilities called for by the Plan. But a beginning was made, notably with two new opera houses at Krasnoyarsk and Novosibirsk, with the rest to follow in the reconstruction period. Meanwhile the civilian population, short of everything except bare necessities during the war, made successful efforts through the co-operatives to increase the supply of consumption goods, and large-scale industry aided in turning out as by-products many articles of metal left over from war manufacture.

Agriculture

Several years before the war, a planned expansion was inaugurated of crops hitherto raised almost exclusively in the extreme west like sugar beets, or in the southern European provinces like sunflowers, to areas east of the Urals. This movement was accelerated after June 1941, and has assumed larger proportions each year since. Moreover, a greater variety of crops has appeared each year, and the expansion has gone farther east, even to the Pacific. The basic principle has been adhered to throughout: attempting to make each district, so far as is possible, self-supporting in grains, flax, vegetables, oil-seed plants, and potatoes. To these has been added a general stimulation of livestock raising, with the emphasis on food animals. Construction of slaughter and packing plants, and canning factories, has kept pace with the increased production of foodstuffs, and the planting of feed crops with that of food crops. Thus, even during the war provision was being made for the support of the old and new population of the Asiatic provinces, which is estimated to have doubled since 1940 by evacuation, refugee movements, and colonization.

Society

As mentioned above, the social amenities promised to all under the Soviet system were delayed somewhat in their complete introduction into the Asiatic provinces. But the schools, first in importance, were soon built, and the older universities, as at Omsk, were soon overcrowded with short-term students. Music, opera, dramatic presentations, and even the perennial circus, were brought to the people by traveling companies, and evacuated libraries were made available. In spite of the deluge of western Russians, the Government's solicitude for the native tribes of Kazakhstan, Central Asia, and elsewhere, prevented their submergence; rather, their opportunities were broadened, both industrially and culturally, by the influx of the Russians and Ukrainians, no longer their enemies but rather their fellow-citizens of the same Union. This cordiality was extended even to the Polish

Jews, evacuated before the German occupation and settled in pre-arranged localities, where they joined the collective farms and added their effort to that of the permanent dwellers.

Thus, the war and the changes induced by war necessity have quickly and in far-reaching fashion brought forward the Asiatic provinces of the Soviet Union industrially, agriculturally and politically—perhaps before the time scheduled in the original Plan, but certainly without the sacrifice or loss of any of the benefits of socialism, except in the proportion or promptness of their application. To carry out the promises will be one of the tasks of the reconstruction period, coincidental with the restoration of the ruin in the Ukraine and the western European provinces; the latter movement is already well under way.

RECONSTRUCTION

Well before the end of the war, the Soviet Government began its preparations for rapid reconstruction of the cities and villages destroyed by the Germans, and of the industrial facilities of the occupied areas. While for nearly a year these plans remained largely on paper, it is worthy of note that actual restoration work began immediately after German troops evacuated a town or village, and that the local population did not always wait for the planners to arrive. Although villages could be and often were rebuilt in this fashion, especially where destruction was not complete, the rebuilding of cities called for a more elaborate mechanism. This was provided in the form of a Government Committee on Architectural Affairs, formed on September 30, 1943, charged with preparing detailed plans for the restoration in more beautiful and efficient form of the 1,710 cities and towns that had suffered from the war. This Committee is responsible to the various Commissariats interested—such as that for Construction—or to the individual municipal building trusts operating under that body, for detailed plans, including provision for industry, for housing, for utilities, for community services, and for parks and sport facilities. It is responsible not only for complete restoration but also for expansion, relocation, and more efficient arrangement of the characteristics of a particular city as it existed before the war. For each of the seventy most important cities to be rebuilt a chief architect was appointed, heading up a group of economists, transportation experts, sanitation engineers, and representatives of all branches of urban economy and civic affairs. The number of cities covered was increased in 1944 to 140, and in 1945 to 310, with architects all over the country co-operating. These architects are not content with merely reconstructing old buildings; these must be more artistic, more harmonious with other structures, and of course more convenient and efficient industrially. City planning does not consist only of putting up so many buildings: it calls, if necessary, for complete redesigning of all parts of a city according to basic prin-

ciples of industrial location and park design, and the adaptation of housing facilities to the special needs of the population.

Another basic principle in reconstruction is the use of local, easily developed materials, avoiding the use of those hauled long distances. In the Ukraine, where timber and stone are not available in the desired quantities, there are brick and cement. Gypsum has been adapted to new uses, as have slag and other by-product materials. The application of this principle saves time and money and encourages local initiative.

A third innovation, of enormous value at this time of feverish rebuilding, is the use of pre-fabricated housing in both town and country in forms adapted to the climate and local customs of the people. These houses are cheap and simple, easily erected, and where possible made of local materials. In addition, for village dwellers, there are available standardized model houses which can be erected anywhere, with the lumber and other materials provided by the Government, federal or local. Variations in exterior are permitted, but the interior, while modern, is simple and well adapted to the average peasant family.

Industry

Beginning with Stalingrad and repeated as reoccupation moved westward, the emphasis was voluntarily placed by the people on restoration of industrial facilities as quickly as possible, even if the workers still had to live in caves. Thus, in Stalingrad the tractor plant turned out its first machine while the people there, returning after evacuation eastward, still dwelt in cellars and earthen huts.

A catalogue of deliberate destruction of Ukrainian and Belorussian industry by the Germans, as reported in the official Soviet Embassy Bulletin, reads like an incredible nightmare. The list includes such figures as: 1,710 towns; 6,000,000 buildings; 31,850 industrial enterprises; 4,100 railway stations; 1,135 coal-mining shafts; 3,000 oil wells; 61 regional electric power-stations; 37 iron and steel plants; 66 fertilizer and chemical plants; 749 machine-building plants; 445 textile mills large and small; and over 1,500 food processing factories. The catalogue, with no details, covers pages, and vividly reflects, with its account of similar destruction of farms and villages, the plight after the German retreat of the 25,000,000 people left in the districts affected.

But the same Soviet Bulletin which reports this wholesale destruction also records the efforts of both Government and people to restore as quickly as possible the plants, mines, power stations and mills, even though fully realizing that it will take years to rebuild the cities, revive the industries, and replant the farms as they were before the war. Due to this concentration of effort on transport and industrial facilities, the record of restoration of blast furnaces, coal and metal mines, even of water supply and street car

service has been remarkable. For example, by September 1945, 19 blast furnaces had been started, 100 coal mines de-watered, and the Krivoi Rog and Nikopol mines were producing iron and manganese ore. Revival of industry was at first slow, because the huge plants in the Urals and Kuznetsk were still producing for war; but as soon as these could reconvert, they shipped machines and materials to the Ukraine, reciprocating the aid the latter had generously given in their own early development.

It is the essence of the fourth Five Year Plan, running from 1946 through 1950, that all of the prewar industrial development of the Ukraine, Belorussia, the Moscow and Leningrad districts, and the North Caucasus, should be restored at least to its former state and level of production. In the process many improvements can and will be made, starting with city planning for comfort and beauty, and ending with complete modernization and re-equipment of individual plants. Taking into consideration the tremendous wartime expansion of industry in the Ural district, Siberia, and central Asia, it is obvious that by 1950 the Soviet Union will possess an industrial machine that promises to supply all the basic needs of the population of both European and Asiatic U.S.S.R. The promise of this latest Plan that the standard of living will be raised well above that of the last prewar years bids fair to be fulfilled.

Agriculture

Even more rapid than the rebuilding of destroyed industrial plants in the Ukraine has been the recovery of agriculture and the restoration, usually from the ground up, of the 70,000 villages burned by the Germans. Farmers returning to their former homes would sometimes find crops still standing; and the planting of winter crops, encouraged by the Government, took on mass proportions. The food supply of the U.S.S.R. in 1944, while far from abundant, was large enough to prevent starvation, and the grain and vegetable crops in 1945 were sufficient to reach a fair average level of consumption and even to provide aid to some eastern European countries that were unable to feed themselves.

The loss most difficult to replace in the Ukraine was that of livestock, with which this Republic was particularly well supplied. At the end of 1937 the cattle census here showed the following figures: cattle, including cows, 7,759,000; hogs, 3,459,000; sheep and goats, 3,302,000; and horses, 2,937,000. Much of this livestock was the private property of the collective peasants. In 1941, the aggregate livestock population (except poultry) of the territory later occupied by the Germans was 109,000,000, including 31,000,000 head of cattle and 12,000,000 horses. The record of German livestock destruction, including slaughtered, confiscated, or driven off to Germany, shows the following figures: 7,000,000 horses, 17,000,000 cattle, 20,000,000 hogs, 27,000,000 sheep and goats, and 110,000,000 poultry.

One reason the figures were not higher was that as the Germans advanced eastward, all livestock that could be moved was driven east as the people evacuated the territory. This trek eastward can be pictured from the later record of the stock returned from evacuation in 1945, when a million cattle were driven about 2,000 miles along the roads—a trip taking many months—and arrived at their destinations with a higher head count than when they started. Later contributions from the central Asiatic Republics still further added to the restoration of the food supply of the devastated areas, reduced almost to the vanishing point by the retreating German armies.

While the Soviet agricultural plans for the Ukraine consist mainly in restoring to prewar acreage the previous plantings of standard crops, particularly sugar beets and oil-seed plants, the measures taken to stimulate recovery have been significant. It is reported that seed loans and credits for planting have been provided in unusual amounts, while 6,000 agronomists and other technicians, 22,000 tractor drivers, 30,000 operators of various agricultural machines, and 2,300,000 head of livestock, had been sent to the liberated regions before the end of 1944; and that policy has been continued since. The mass repatriation of livestock driven eastward before the advancing Germans in 1941 has been the subject of epic narratives in the Soviet press. Most of the machine-tractor stations were restored in 1944, and new ones have been added in the newly-annexed territories. The re-establishment of the meat and poultry farms of the collectives has proceeded with similar rapidity.

While destruction of houses in the villages was more complete than in the cities, restoration there is also simpler, and pre-fabricated units have proved particularly valuable. Here the co-operative spirit of the Russian peasant will have full scope, for despite generous help and guidance from the Government, both federal and republican, the job calls for personal initiative and community effort. Encouragement is provided by bank loans up to 10,000 rubles for individual homes, and by supplies of lumber and materials from *oblast* authorities. The day is past when the Russian peasant could go into the woods with his hatchet and in a month or so build himself a log "izba" that would satisfy his wants for a generation or two. The modern collective requires substantial houses, barns and sheds, a hospital, school, and clubhouse; and it will take time to rebuild all the villages according to the new plans and modern ideas which the Government is ready and willing to supply.

Transport

The Soviet press reports the destruction by the Germans of 39,000 miles of railroads, all bridges, 4,100 stations and 36,000 post and telegraph offices. During the westward advance, the Russians performed miracles of

restoration of lines and bridges to enable the troops to move forward; but the full reconstruction of the railroads in the Ukraine, the location of the most dense rail-network in the whole country, cannot be quickly accomplished. It is estimated that not before the end of 1947 will all the prewar rail-lines be in operation, including second tracks, and that much work must also be done on the railroads in the annexed western territories to connect them with the Soviet system.

As an aid to internal transport, restoration of river and canal waterways and rebuilding and new construction of roads are on the program. The Dnepr-Bug canal, reopened just before the war, will be one of the first works undertaken. The White Sea-Baltic canal, closed during the war, has been repaired and will reopen in the spring of 1946. Details of this part of the program are still lacking, but because of its importance it can hardly be postponed.

Life in Town and Country

It is evident from the above and from many detailed press reports that the Soviet Government, through its system of socialist control, is making supreme efforts to restore as quickly as possible the normal, prewar conditions of life in town and country. At the same time it is striving to improve these conditions yet further and to lay the groundwork for a continued rise in standards of food supply, manufacture and distribution of consumption goods, and internal transport and communications. It is also evident that this goal cannot be completely achieved under five years, if then; but tremendous strides have already been taken, and the Soviet people seem to be prepared for whatever sacrifices must be made during their journey back. Enough has been said to give an outline of accomplishments already registered, and a preview of what is to come in the post-reconstruction period; to the latter attention may now be directed.

POST-RECONSTRUCTION DEVELOPMENT

It is a truism accepted by all students of Russian economic history that all the efforts of successive governments there—beginning with Peter the Great, carried on spasmodically and superficially under the later Tsars, and intensified, planned and directed by the Soviet regime—to develop fully the natural and human resources and reserves of the country have still, after two and one-half centuries, only furrowed the surface of possible exploitation and utilization of the riches with which geological ages have endowed the area covered by the U.S.S.R. Countless volumes in Russian and now a few books in English have listed the metal, mineral and agricultural resources of the country. A few years more may easily double the figures of explored reserves of mineral resources, and show a tremendous increase in population. The list of known natural resources in 1937, shown in Table 2,

TABLE 2

NATURAL RESOURCES OF THE U.S.S.R. AND THE WORLD

		World Total	U.S.S.R. (1-1-38)	Rest of World	United States	Great Britain with- out colo- nies	France with- out colo- nies	Ger- many
Coal	Bil. tons	7,916.0	1,654.4	6,261.6	3,485.0	182.8	10.5	345.5
Petroleum	Mil. tons	7,965.1	4,679.3	3,285.8	1,861.0	—	1.3	1.2
Potential hydro- electric power	Mil. kw.	—	280.0	—	82.2	—	8.9	3.7
Forest area	Mil. hect.	3,000	610	2,390	243	1	10	13
Peat	Bil. tons	250.6	150.6	100.0	13.4	—	0.3	10.0
Iron ore	Bil. tons	500.4	267.4	232.9	94.3	12.2	12.2	4.2
Manganese ore	Mil. tons	2,458.0	784.9	1,673.1	5.2	—	—	—
Including cate- gories A & B	Mil. tons	415.9	230.0	185.9	0.4	—	—	—
Phosphorites and apatites	Mil. tons	16,356	3,788	12,568	7,371	—	7	—
Apatites	Mil. tons	623	477	146	2	—	—	—

was out of date before the war; and as later discoveries are made—and they surely will be—the figures will continue to rise.

The Soviet Union thus possesses over half of the world's oil, peat, iron ore and high-grade manganese; over a fifth of its coal, forests and phosphates; and a large share of all its potential hydroelectric power.

But the basic needs, both industrial and consumption, of the people of the U.S.S.R. were far from satisfied before the war, if the record of other countries is taken as a standard. Data publicized by Stalin himself to spur the workers and peasants to greater efforts (Table 3), show plainly the

TABLE 3

PER CAPITA PRODUCTION OF SOME MAJOR INDUSTRIAL GOODS IN THE U.S.S.R. AND OTHER COUNTRIES

(U.S.S.R.—for 1937; other countries per latest published data)

	Unit	U.S.S.R.	United States	Germany	United Kingdom	France	Japan
Electric power	KWH.	215	1,160	735	608	490	421
Pig iron	Kg.	86	292	234	183	189	30
Steel	Kg.	105	397	291	279	188	62
Coal	Kg.	757	3,429	3,313	5,165	1,065	643
Cement	Kg.	32	156	173	154	86	60
Cotton fabrics	Sq. met.	16	58	no data	60	31	57
Wool fabrics	Met.	0.6	2.8	no data	7.4	no data	no data
Shoes, leather	Pair	1	2.6	1.1	2.2	no data	no data
Paper	Kg.	5	48	42	42	23	8
Sugar	Kg.	14	12	29	8	21	17
Soap	Kg.	3	12	7	11	10	no data

Source: Sotsialisticheskoye Stroitelstvo S.S.S.R. (1933-1938), Moscow 1939, page 26.

gaps in Soviet per capita output of the primary goods that modern industrial civilization requires. While these figures undoubtedly rose before 1941, as previously suggested, the war forced a great reduction all down the list, and only by 1950 are they expected to reach prewar levels in all respects.

In many key industrial products, Soviet output in 1937, even after the great increases under the first two Five Year Plans, was still only a quarter to a half as much per capita of population as in the most advanced industrial nations.

Soviet planners fully realize the difficulties of their task, will capitalize on their errors in the past, and will take advantage of the post-war upsurge in effort and released energy. This may be expected to bring about the restoration by 1950 of the level of industrial production and the scale of comfort in living that existed in the late '30s. And undoubtedly the expansion of industry eastward, begun in 1930 and intensified enormously during the war, will continue unabated, if for no other reason than to satisfy the demands of the growing population of Asiatic U.S.S.R.

EXPANSION OF INDUSTRY

As an indication of the most likely area for immediate industrial expansion, already begun and reported in sufficient detail to justify predictions, the huge area of the Kazakh Republic in western Siberia, and the four Central Asiatic Republics of Turkmenistan, Uzbekistan, Tadzhikistan and Kirghizia may well be considered. Here prewar development was slow, but during the war feverish efforts, concentration of labor, and unlimited funds were devoted to building of small industries into large, to starting new plants and power-stations, and to more intensive exploration of natural resources and expansion of agriculture.

The results justified these desperate measures, as has already been pointed out. The production of the Urals and Asiatic U.S.S.R. not only filled the gap left by the surrender of the Ukraine, Belorussia, and the North Caucasus to the Germans, but was greater as a whole by 1944 than the output of the entire country in 1940. But this was production for war. Post-war development will accent production for peace, with the basic objective of Soviet government policy—the improvement of the living standard of all the people—again becoming the dominating principle of Soviet domestic activities.

To catalog the possibilities of industrial development of the enormous area east of the Urals would require a library. Only examples can be given here of some localities that are slated for further investment and expansion. In Kazakhstan, for example, a new steel town will arise at Karaganda, where a large coal field has been operating for several years. The steel

plant, which will turn out 600,000 metric tons of steel a year, and the same of rolled shapes, is expected to be producing by next year.

In central Asia, textile mills, electric power-stations, and coal mines and oil fields will be expanded. In the Altai mountains, and even in isolated Tannu-Tuva, the hills will be tunneled and the rich metal reserves will be tapped. All along the Trans-Siberian railroad and its twin line farther north, the Baikal-Amur trunk, old towns will grow and new arise, populated by stronger, more virile generations of "Sibiriaks," who as descendants of pioneers, will endure the hardships of developing a primitive country. Along the coasts, shipping and shipbuilding will be a leading industry, for the Soviet Far East will undoubtedly compete in the markets left poorly supplied by the disappearance of Japan as a factor in foreign trade. Lumbering and fishing, based on inexhaustible reserves, will produce greatly increased quantities of goods for home consumption and for export.

And finally, the Soviet Arctic, with immense opportunities for exploitation, will again occupy the attention of the Northern Sea-Route Administration, which began the development of its almost unlimited area in 1930, and even during the war did not cease its activities. This effort will require the toughest "Sibiriaks" and the most devoted scientists, aviators, and industrial experts to find and utilize the many useful metals and minerals this area seems to possess—like other parts of the Soviet Union—and to train the natives for industry. This program, steadily expanded during the '30s, will surely be continued in the future.

AGRICULTURE

The possibilities of agricultural development in Asiatic U.S.S.R. are more limited than those of industry, because of Arctic or Sub-Arctic climatic conditions over the northern portions of the area. But there are arable parts, even in the sections north of the Trans-Siberian railroad. The agricultural potentialities of these areas have been the subject of research by Russian soil specialists for many years.

Experience before and particularly during the war lends encouragement to the belief that in a few years Soviet Asia may be self-sufficient in basic crops, and even in many vegetables. When the Ukraine with its sugar beet belt and mills was lost in 1941, experiments had already proved the possibility of large-scale plantings in many sections of Asia, even as far east as the Ussuri valley. Rice has for many years been planted in Central Asia, and other grain crops flourish there under irrigation. Potatoes moved eastward during the war, as did winter grains and fruits and berries. As larger quantities of perishable vegetables are grown, facilities for preserving food supplies will be increased correspondingly.

The endless steppes of Soviet Asia and the treeless tablelands offer un-

limited opportunities for livestock and, in the north, reindeer husbandry. Before the Revolution, Siberia was famed for its herds of cattle and sheep. All that is necessary for tremendous expansion of this industry is the growing, where required, of sufficient feed crops to carry the stock through the long winters.

With the expansion of cereal, vegetable and meat production there have already come food-processing plants to conserve summer surpluses for later use. Canning plants, once limited to the preserving of Pacific coast fish and crabs, now stretch across the continent, and can be expected to keep pace with production of vegetables, fruits, and meat. Large packing-houses were long since established in a number of cities along the railroad, and their multiplication is merely a question of time and demand. Federal investment in such facilities may be counted on as surely as funds for the erection of new cities and new industrial plants. With the expansion of Soviet industry in the east, Soviet planners will also provide for the workers and their families, first in the matter of food, following the principle of local self-sufficiency, and next in the amenities of life, without which no Soviet city is complete.

PARTICIPATION OF THE UNITED STATES AND OTHER COUNTRIES IN SOVIET RECONSTRUCTION AND INDUSTRIAL EXPANSION

Long-Term Loans for Production Facilities

There is some basis for the Soviet prewar claim that the major part of their industrial development as originally planned could have been carried out by relying on their own resources, without the foreign help they did receive. These included the scientific leadership of the Academy of Sciences, the network of industrial commissariats, and the increasing supply of trained managers, skilled workers and agricultural specialists turned out by the rapidly growing schools and colleges. In 1940, therefore, it is understandable that dependence on foreign technical guidance, even on imports of foreign machinery and materials, reached a low point, particularly in relation to Germany, for years the chief origin of Soviet imports of men and goods.

But the war upset the timetable of the third Five Year Plan, and forced the Soviet government to concentrate for five years on producing for destruction instead of construction. The whole balance of Soviet planning was thrown out. As previously pointed out, it is only by the beginning of 1946 that the Russian economy can get back "on the rails," and start to look ahead again to the goals which, during the war, were of necessity pushed into the background.

The first and greatest demand of the Soviet Union on other countries will be for goods and for the money to pay for them. The practically complete cessation of exports from the country has shut off the flow of foreign

currency with which the Government could pay for imports, yet even before exports can recover to their prewar average of about \$500,000,000 a year the volume of imports must be many times the highest figures reached since 1918. The subject of primary importance in Moscow therefore must be a study of where and how much the Soviet Union can borrow, to pay for the enormous quantities and great variety of goods that are needed now and will be required for many years to speed up the process of reconstruction and expansion to which the country is looking forward. The saving of time has a social and political importance as well as an economic significance. After five years of war, with its inevitable destruction of housing and individual property, its disregard of comforts and even of necessities for the civilian population, and the exhaustion of physical and mental energies in response to the pressure and demands of all-out war, it is imperative that the government should restore promptly the elementary facilities for living and the most easily rebuilt and reconverted industries. It must do this before it can obtain the support of the people for the less pressing industrial and social projects originally planned for the '40s, but now postponed to 1950. This popular support will hardly be forthcoming if the workers and farmers cannot be made to feel that the Government places in the first rank of importance the satisfaction of immediate human needs, and the concentration of all facilities as they become available on that objective.

Yet as matters stood, at the end of 1945, even these imperative needs could not be covered without heavy imports of foreign goods, as evidenced by the assumption by the Soviet Government of an obligation of \$400,000,000, to pay for the unaccepted portion of the goods requested under the fourth protocol of the Lend-Lease programs. Good examples of pressing needs would be pumps for de-watering the coal mines of the Donets Basin, or locomotives and cars for the restored railroad lines in the German-occupied areas, where 39,000 miles of line were destroyed. The output of the entire prewar industrial establishment would not suffice to cover even these two individual demands, and to fill them from the present truncated industry would need several years; yet the need for coal and transport is basic, and the degree and speed of its satisfaction govern all industrial rehabilitation.

While, therefore, there is no doubt that the Soviet Union would prefer to depend on its own resources and efforts in carrying out its present Plan, there is also no doubt that it will call upon the financial and industrial reserves of other countries to help it first in accelerating the return to the prewar status, and later in the expansion of its industry eastward, as previously described. Offers of such help were made months ago by Sweden, Great Britain and Switzerland, perhaps the only countries aside from the United States in a position to make a serious tender of aid. And the United States, in accepting the \$400,000,000 Lend-Lease settlement, has opened the way

for further loans providing several billions of dollars on a long-term basis, of course for expenditure in the United States.

Judging from the character of the goods included in the Lend-Lease arrangement, and that of orders being placed in the United States by Soviet buying agencies at this writing, the emphasis on production goods will continue, as is readily understandable. Future orders, when credits become available, may be expected to show a similar preference. The Soviet consumers' goods industries, with certain increases already underway, will in a year or two be able to satisfy the minimum needs of the people, and even to supply many of the comforts and luxuries enjoyed before the war. Eventually, Soviet spokesmen claim they will be able to raise the standard of living higher than it has ever been in previous Russian history. This allocation of orders, if placed in the United States, would fit in well with the situation of industry here, and enable the corporations producing heavy machinery, railroad equipment, machine-tools, and many other items the peacetime demand for which cannot fully absorb the increased capacity created in wartime, to find an export market for their products. A list of the industries that would be benefited by Soviet orders over the five years of the Plan would cover almost every major branch in existence, and thousands of smaller firms manufacturing special lines of products. Even some of the surplus war plants themselves, which are already idle, may well be exported as units and set up in old or new industrial districts of the Soviet Union.

Technical Assistance Contracts

In the process of Americanizing (the Russians call it "Fordizing") Soviet industry and transport and mechanizing agriculture, which began before 1930 and continued up to and even during the war, mass production equipment from the United States was not the only export to the Soviet Union involved. The technical "know-how" and experience of American engineers, chemists and technicians was an integral part of the contract for selling equipment, and was often the deciding factor determining the placing of an order. Thus, the technical assistance of the Ford Company, the International General Electric Company, the DuPont Company and dozens of other firms, large and small, was drawn upon and utilized by the Soviet Union on a definite contract basis. The services of United States engineers of prominence, such as Hugh Cooper in hydroelectric construction, Archer Wheeler in copper mining, Houdry in oil-refining, and hundreds of others, were utilized and generously paid for, to teach the Russians to produce the same results in the Soviet Union as had been achieved in the United States and elsewhere. The record shows hardly a case where the contract was not executed by both parties to the satisfaction of each.

The resumption of this form of international trade did not await the ter

mination of hostilities. Even during the war the help of engineers from the United States was enlisted to increase Soviet output of gasoline, to manufacture tires, and to speed work in other branches of war industry. With the transfer of fighting beyond the Russian border, the International General Electric Company undertook for the second time to build generator units for the Dnepr dam; the DuPont Company resumed its connection with Soviet chemical plants; and many other companies were approached with offers of contracts to provide technical assistance in establishing new plants in the Soviet Union to produce commodities of importance to the Russian industrial development.

While these contracts do not always include the sale of equipment, they often do. In addition they call for the sale of patents covering special machines or processes, as well as direction in setting up new plants, erecting the machinery, and instructing Russian personnel in turning out the products. The time involved may run to several years, and the number of Americans called for on a particular job to dozens or even hundreds. The sums needed to cover a complex contract may easily reach several million dollars over five years. It is noteworthy that Soviet agencies usually approach large firms whose operations represent mass production methods of a few items, or quantity production of many. But it is not unusual for Soviet scouts to discover a small manufacturer who makes a single product necessary to their programs, and to contract with him for a plant that will duplicate his own and the technical guidance that will enable the Russians to build and operate it.

The prospects of this form of export trade are endless, and the number of firms that may obtain contracts of this type cannot be predicted. In the United States the war years have brought general refinement in all forms of manufacture, and have developed many new and improved methods of making mass-consumption goods. A plea for technical assistance in establishing similar processes or industries in the Soviet Union may be confidently expected, and will be responded to readily by the firms in the United States interested in taking advantage of this export opportunity. The favorable effects of this interchange of knowledge, experience and personnel should be felt by both parties to each bargain, and by the people of the two countries. International friendship on the level of trade favorable to each of two countries is a solid basis on which other relations can be built up, growing stronger as the years pass.

The Soviet "Sphere of Influence" in Eastern Europe

In some respects the industrial situation in the U.S.S.R. is similar to that which existed after World War I. At that time also industrial production in approximately the same districts had been reduced to a fraction of the former output, and the process of rebuilding, after the Civil War, took

about five years. At the present time, however, the prospects are more favorable. The expanded Ural production, and the new industrial output of the eastern districts, will be available for the restoration of industry in the Ukraine and Belorussia, and for the re-equipment of plants in Leningrad, Gorkii, and many other badly ruined cities. But as pointed out earlier, domestic production cannot possibly supply immediately the tremendous number of machines, rolling-stock, materials and other commodities required for the vast operations of rebuilding, modernization and expansion that are envisaged in the fourth Five Year Plan. Hence a policy of relying heavily for rapid recovery on importation of goods not produced at all in the Soviet Union, or of those that under present conditions cannot be manufactured in sufficient quantities in a few years, has already been adopted. As indicated above, these goods will come mainly from the United States, though a small proportion will probably be purchased from other countries able to produce what is needed and willing to sell to the Soviet Union on credit.

There remain, however, a few countries that are not conspicuous for large industrial production but offer other inducements for Soviet consideration, as sources of certain goods, and as partners in joint recovery from the destruction of war. These countries are those adjoining the U.S.S.R. in southeastern Europe: Czechoslovakia, Hungary, Rumania, Bulgaria, and Yugoslavia.² Conditions vary greatly from country to country, industrially, agriculturally and in many other respects. They are all similar in one respect, namely, that they were rescued from German occupation by the advance of the Russian armies, which have remained a strong element in all of them since the collapse of Germany. At first frankly armies of occupation, welcomed by the local populations as deliverers from Fascist oppression, these Russian troops have since played many roles—restorers of order, rehabilitators of transport, sources of food supplies, even assistants in rebuilding ruined structures both government and private. They have also without doubt removed to the U.S.S.R. as booty of war goods, rolling-stock, even whole industrial plants for re-erection in the U.S.S.R. The economic effect on the countries concerned cannot well be estimated at the present time. It is safe to say, however, that none of them will be permitted, in the near future, to become powerful enough to threaten the U.S.S.R., no matter what political or social changes may occur.

One aspect of the so-called "domination" of these countries by the Soviet Union deserves attention as one of the developments that should be watched over the coming years. That is the institution by the Soviet temporary authorities of a system of "mixed companies," with an equal proportion of stock owned by the Soviet Union and the country concerned, but actually controlled by the Soviet officers and operated as part of the Soviet

² Finland and Poland are not discussed here, as both are special cases.

government machine. Companies of this type have been set up chiefly in Rumania, and already include aviation, a number of industries, particularly oil, motion pictures and even maritime transport. A "mixed company" has also been set up to facilitate and perhaps monopolize trading between the U.S.S.R. and Rumania, which may become a State trading country in the Soviet sense as a consequence.

It is interesting to note that the "mixed company" device was freely used by the young Soviet Union in the '20s, when German and Russian "capital," consisting often of German money and special privileges extended for German operations in the U.S.S.R., or vice-versa, co-operated in both the U.S.S.R. and Germany in industry, trade, and even agriculture, in one country or the other. These arrangements did not have the standing of concessions, and were progressively liquidated over the years as the Soviet Union became more powerful and expanded its own industry and trade to a point where foreign assistance was no longer required.

The extent of the Soviet economic "domination" over the eastern European countries in the future seems at this writing impossible to predict with any assurance, because of the presence of so many factors other than economic in the picture, and the great variation in the different countries not only of these factors but also of the economic features. It seems probable, for instance, that in Czechoslovakia, where native industries are strong and advanced, where the political system is established and has the support of the majority of the population, and where friendly trading relations with the U.S.S.R. have long been in effect and have proved mutually beneficial, these relations will be revived and strengthened. No change that the Russians could propose, or offer that they could make, would be effective in improving the country's economic or social conditions, which before the war were superior to those prevailing in the Soviet Union.

But in Rumania, where industry was weak, agriculture far from modern, transport undeveloped, and the standard of living for many low, and where political changes equivalent to a revolution have still to run their course, the economic help and guidance offered—perhaps even forced—by Moscow may come to be accepted as the quickest method of re-establishing the economy, even if that acceptance involves dictation as to means of achieving a desired result.

In the other three countries, with perhaps the addition of Albania, it seems likely that varying degrees of socialist control by a new government will eventually be set up. Agricultural reform, consisting of expropriation of large landholdings, has been generally introduced, though this condition may not be permanent. Co-operative societies have been strengthened and expanded into new fields. State control of domestic trade has been universal and necessary because of the shortage of supplies of all kinds, from industrial materials to food and consumption goods. Transport and communi-

cations were usually government-owned and operated before the war, but government ownership and management of industry will not necessarily be instituted, except temporarily during the transition period between war and peace; during that time *only* government can handle and finance the work that needs to be done.

It would seem that the Soviet Union, with its long experience first in asserting its control over all industry and agriculture, and later in modifying that control and decentralizing operation as circumstances permitted and the people developed a sense of unity and responsibility, will probably be a more welcome adviser and guide during the formative years than any of the foreign powers formerly prominent or dominant in the domestic affairs of these countries. Germany has passed from the scene, France is itself in a state of change to the unknown, and England can no longer act as the world's banker. The United States has shown no indication of wishing to replace these three nations as economic and social mentor and partner in the developments that will inevitably follow the end of the war in eastern Europe. The position of the U.S.S.R. seems unassailable if it wishes to assume the role of Big Brother.

But it must be emphasized, in the opinion of the writer, that acceptance to a greater or lesser degree of the economic and agricultural pattern adopted and perfected by the U.S.S.R. will be dependent on the extent to which that pattern conforms to the needs of each individual country and is supported by the people affected. Any arrangement made, to be permanent, must not be one-sided but must tangibly benefit both the Soviet Union and the other country concerned. If it does this, it will work, and will stabilize the new states and provide the security on her border that the Soviet Union needs. If it does not, it will both jeopardize the fifty years of peace required by the U.S.S.R. for her own reconstruction and internal development, and help to keep that corner of Europe in a turmoil for years. The Soviet Union has much to gain by wise participation in the resurrection and solid development of these eastern European and Balkan countries; and these states can learn valuable lessons from the experience of their Brobdingnagian neighbor, allied to three of them by blood but separated from all for twenty-five years by differences in economic organization, as well as by political ideology and social pattern. The next few years may easily be decisive in determining whether the Soviet Union will be a factor for peace or for war in eastern Europe.

In an attempt to chart the probable relation after the war of the Soviet Union with its neighbors in southeastern Europe, the actual policies and practices of the Moscow government in the former Baltic Republics of Estonia, Latvia and Lithuania in the year since Soviet reoccupation of those states may be studied with profit. Here the areas had formerly been part of Imperial Russia, and their economy had been Russian until the

Revolution, when they became nominally Republics. In the years before 1939, however, Fascist influences grew in strength. German occupation in 1941, when these states served as thoroughfares for the German attack on the U.S.S.R., reduced them to parts of the Hitler Reich. Their reincorporation into the Union as constituent Republics took place by plebiscite in 1940, and this action was confirmed by the population that remained after the Russian armies had driven the German forces out of the Baltic territory.

As in the Balkan states, the Russians came into Estonia, Latvia and Lithuania as deliverers of the population from the German yoke, which had been as heavy and strangling as in the other countries. But the armies stayed only a short time, soon moving further eastward into East Prussia and Poland. They were promptly succeeded by civil authorities, who ensconced themselves firmly in power. The usual Soviet pattern was established, with head officials—Russians or adaptable natives of the country—entrusted with the application of Soviet industrial and agricultural policies to the circumstances prevailing in each country.

The first economic steps taken were the restoration of industry and farming, according to the degree and speed possible in each case. The simpler and smaller industries came first, materials being supplied when necessary from Soviet sources. Fields were planted when possible, and seed was also supplied. New factories were erected on a considerable scale, and preparations were made to rebuild a number of large plants in Narva, Tallinn and Riga that had been gutted by the Germans. A most important step immediately taken was the reopening, when repaired, of all old schools, and the construction of new ones where a need existed.

Based on these general principles, the incorporation of the Baltic states into the U.S.S.R. has made great progress in the year from October, 1944, and the working out of the program can be studied in some detail.

In the first place, the government organization in each new Republic consists mostly of natives, of course under Russian direction. In Estonia, for example, some 20,000 natives make up the government apparatus, starting with the villages as a base.

In industry, restoration of large units has made rapid progress, and almost every factory of any size is in operation, though not at capacity, and not always turning out its previous special products; new lines of manufacture are often added. Examples of such plants are: The Narva Krenholm cotton mills, where 37,000 spindles are working up Russian cotton; the Tallinn steel foundry, and Baltic shipyards; the Riga municipal electric station, and numerous factories dependent on power. In Latvia 1,000 industrial enterprises have been restored, and 220 more, employing 115,000 hands, were started by January 1, 1946. In Lithuania 265 industrial plants, mostly producing foodstuffs and consumption goods, are at work;

32 electric stations, and the all-important railroads, are operating; a textile mill has also reopened.

The Soviet system involves several steps. First is direct investment of funds, sometimes very large, such as 1,000,000,000 rubles a year for the restoration and expansion of the Estonian oil-shale industry. Next come assignments from the Union budget to the Republic's budget, such as an appropriation of 300,000,000 rubles for the Estonian national economy, and 80,000,000 rubles additional for the rebuilding of the three largest cities. The third step is the provision of factory equipment from the Soviet Union—always the latest models, thus modernizing as well as re-equipping the factories. And the fourth stage calls for the supply of the raw materials necessary: for Estonia, for example, cotton, sugar, tobacco, and petroleum products are mentioned. Production under way in Estonia as the result of these measures of assistance includes machine-building, furniture manufacture, shipbuilding, and the supplying of glass, lumber, peat-fuel, paper products and textiles. An ambitious project recently announced consists of a gas pipeline from the Estonian shale deposits to Leningrad, tapping on its route similar shale mines west of that city; work has already begun on this scheme.

In all three Republics, the post-Revolutionary agricultural reform, by the usual subdivision of large estates, has been carried farther. In all cases land has been allotted to landless peasants: in Estonia to 27,000 families, in Latvia to 61,000 individual farmers out of a land fund of 2,470,000 acres, and in Lithuania to 75,000 tenant farmers. In the last-named, several estates have been preserved as State farms (*Sovkhozy*), and five new agricultural research stations have been set up. It does not appear that in any Republic forcible collectivization of land along Soviet lines has been applied; individual ownership or at least utilization of land is continued. But machine-tractor and machine-horse stations to provide draught power for tools and implements have been restored, and some tractors supplied. The emphasis is put on co-operatives, long-established; they have been expanded, set up in the dairying business, and otherwise aided. In Estonia these and livestock raising have been favored. In all three Baltic Republics, stock, machinery, buildings, and seed have been provided, either on credit or as a gift, also cash where necessary to start operations.

In a third field, education, Soviet assistance has also been extensive. Restoration of village schools has been followed by rebuilding of universities, agricultural academies, normal schools, and conservatories. Research institutes of the Academy of Sciences have been founded. Lithuanian schools house 290,000 pupils, and Estonian schools 120,000. Two Republics have re-established their art institutes, and Latvia has 13 theaters, presenting plays by native writers.

The Soviet absorption of the Baltic Republics has already enabled these

to re-establish their economies and begin a return to normal life. Again the Soviet Union, like Russia of old, provides a market for Baltic products, and a source of raw materials. To what extent further developments, social, political, and economic, will reproduce the whole of the Soviet system of planning, control, and monopoly of trade, domestic and foreign, remains a matter of conjecture.

THE U.S.S.R. AS A FACTOR IN WORLD TRADE

It has already been suggested that the U.S.S.R., in order to rebuild its shattered economy without demanding unbearable sacrifices on the part of its people, and later to expand that economy to keep pace with its people's needs, will require large imports of goods. These can be bought on credit, from the United States in particular, and from other countries as well, as supplies of the required goods become available. It has also been pointed out that by merely maintaining the prewar rate of exports of \$500,000,000 a year, the debt thus incurred can be serviced by the Soviet government, all the more readily because of the system of State control of foreign trade which has been in operation, becoming ever stronger and more efficient since 1918. This control will enable the Soviet Union yet again as it has before to balance exports against imports, and thus maintain its standing as an honest borrower, with a high credit rating in the eyes of the world. If prewar exports can be expanded, the debt can be serviced even more readily.

The interwar years provided a test period, wherein the ability of a State trading country to manage its foreign trade relations with other countries then devoted to a system of private trading was subjected to every outside influence and criticism and probably to much internal scepticism. By 1941 the U.S.S.R. had not only established itself as a good credit risk, but had developed by trial and error a mechanism for handling the large trading transactions involved in buying and selling abroad for 190,000,000 people. This mechanism, of course, could not reflect or satisfy the individual desires of all the people; but it could and did respond to the dominating requirements of the over-all Plan, which had the support of the people because of its long-range promise. The later success of this Plan in winning the war confirms its acceptance by the nation, and it seems reasonable to expect a continuation of popular support for the foreign trade monopoly, even at some sacrifice, especially if the fourth Five Year Plan produces the promised results.

Early in the '30s Soviet "export and import combines" were established—agencies through which all movements of goods across Soviet boundaries are channeled. These have now become familiar names as buyers and sellers in foreign markets. In practice, if not in their status under Soviet law, they are regarded as agencies of the Soviet government, which will

go to any length to avoid default on any bill bearing a Soviet promise to pay. Unlike the condition in countries pursuing private trading methods, every such promise is backed not only by the Russian gold reserve but also by the enormous quantities of goods for export, from grain and lumber to platinum and gold, which can be marshaled by the government in case of need. Questions of foreign exchange do not arise to plague the trader. Up to the present time the use of the ruble has not been permitted by the government outside of the country, and all transactions have been made in the currency of the other country concerned, or in sterling and dollars. It is easier in the case of the Soviet Union than in that of any other country to envisage foreign trade as a huge barter transaction, whereby one party buys from or sells to all other countries in the world, and keeps its accounts in balance by a world exchange of goods.

The foreign trade position of the U.S.S.R. will undoubtedly be strengthened by its membership in the Bretton Woods organizations (which in the opinion of the author will not be postponed many months), as they begin to function and operate through the years for the benefit of the world. As the Soviet Union works its way back to comfort and security, the ruble will undoubtedly be stabilized at a point which can be maintained abroad as well as at home, on the basis of an abundance of goods sufficient to cover both domestic needs and requirements for export. The latter will be high for many years, obviously. But a high volume of importation will be balanced by a high volume of production, in due time to repay the loans with exports. Judging from past experience, a point will be reached where imports will drop, after most pressing needs have been satisfied; exports, however, must continue high, until foreign borrowings are retired. What will then be the condition of world trade is a matter for prophets to prognosticate.

The opinion may be hazarded that the existence of the State foreign trade monopoly of the U.S.S.R. may well prove a strong stabilizing factor in the whole world trade picture. In fact, it is not beyond the realm of possibility that the evolution of foreign trade will tend in the direction of State regulation of that trade, as practiced during the war among the large trading countries. In the meantime, the Soviet trading operations will be *of great importance to many countries, and will provide a record of experience from which valuable lessons can be drawn both by the Russians and other nationals.*

THE MEDITERRANEAN BASIN

CHAPTER XI

IBERIAN PENINSULA

by NATHAN M. BECKER

BACKGROUND—BASIC CHARACTERISTICS

Physical Characteristics

Joined to the continent of Europe by a relatively narrow stretch of land which is itself mountainous and difficult of passage, the Iberian Peninsula is essentially sea-faring in its outlook. Except for a narrow coastal border the area is rough and mountainous, a topography which has, in large part, conditioned the economic, social and political life of the Peninsula.

Portugal covers an area of 36,000 square miles and has a population of some 7.5 million people; Spain, with an area of 195,000 square miles, has a population of some 27 million.

Only about a fifth of the Peninsula is actually under cultivation although the percentage of arable land is somewhat higher. The mountainous character of the land reduces, of course, the arable area and the lack of adequate rainfall in most of the Peninsula taken together with the inefficient methods of agriculture make for a very low crop yield per acre or per capita.

An Agricultural Region

The chief occupation is agriculture (including fishing). Only a fifth of the gainfully employed population is engaged in manufacturing; another important fraction is engaged in mining. It would not necessarily be remarkable that an area the size of the Peninsula and having a population of some 35 million were mainly agricultural—it becomes remarkable when such an area specializes in agriculture and yet cannot produce enough of its specialty to provide for its own basic needs. Both Spain and Portugal depend upon imports of food, especially grain, to meet even the minimum needs of their people. The failure of the economic system to provide adequate quantities of food, directly or indirectly, is an indication that something is wrong with the economic systems as they operate today. Either the productive resources have been used inefficiently in the production of

foodstuffs, or a larger proportion should have been used for non-agricultural purposes.

Adequate statistics do not exist to indicate the age groups, rate of growth, movements, changes in skills and technical levels of the population, nor are there adequate statistics of capital formation and growth, its distribution and use. Yet the overall picture is clear. The general low mobility of labor as well as a low level of technical skill in both agriculture and industry is only in short measure offset by the existence of a few groups of skilled workers in a relatively few centers. This is no reflection on the native ability of the Spanish or Portuguese workman. It is merely a reflection of the level of economic activity and its failure to keep in touch with the technical progress which has been made in the modern agricultural and industrial world—a failure to provide either education or opportunity in sufficient quantity to a sufficient number of people.

Delayed Effect of Industrial Revolution

The impact of the Industrial Revolution and the economic and political implications of that impact were not felt in the Iberian Peninsula in any strength for a very long time after these forces had been at work in most of the rest of Europe. Just as Russia did not completely break with the feudal past until the twentieth century, so the impact of the Industrial Revolution on the Peninsula was delayed for many generations.

The reasons for this delay lie deep in the roots of feudalism, in the power of the ruling groups and of the church. But these conditions also existed in other parts of Europe which, nevertheless, succeeded in breaking forth from their medieval shackles. The backwardness of the Peninsula may be attributed mainly to the difficulties of transportation and communication. The Peninsula was a stronghold of sea power and held a high place in the sea commerce of the world. But neglect, unfortunate wars, and the indifference and short-sightedness of its rulers had reduced the Iberian Peninsula to an inferior position even in sea power and commerce before the dawn of the Industrial Revolution. The difficult conditions of land transport between the Peninsula and Europe and especially within the Peninsula, militated against the development of a new middle class interested in the growth of "free and unhampered" commerce and industry. The Industrial Revolution and the doctrines of economic liberalism took strong root in France and England and spread to almost all of Europe—but the soil of the Peninsula was not suitable for such growth for many years thereafter.

The Peninsula, therefore, continued to live in the Middle Ages—at least economically and politically—for many years and has never recovered fully from this early disadvantage relative to the growth and development of modern economic organization and practice.

EFFECT OF CIVIL AND WORLD WARS

Spain Under the Republic

The recent Civil War in Spain removed from power the political groups which one might normally have supposed would have been on the side of economic liberalism. And to a great extent this supposition was, in fact, correct. Under the Republic, Spain was moving in the direction of a left-liberal program. This program, had it developed further, would probably have produced a combination of greater freedom of trade—internal as well as foreign—along with the socialization of certain basic utilities and industries and the introduction of basic agricultural reforms. The pattern is not clear, however, because within the Republic there remained strong local and sectional feelings, separatism. Land reform was well under way, but whether a sound agricultural program, geared to the industrial possibilities and foreign trade requirements, would have been achieved remains a matter of debate. One of the chief consequences of the brief Republican regime in this connection was that new ideas, new reforms; new leadership, and a new outlook in general, made more possible or probable the break with the past which Spain required.

The Civil War

The war itself brought ruin to the economic system.

The loss of capital, the decline in foreign trade, the diversion of economic resources to war purposes, and the very bitterness of the fighting left Spain in an extremely impoverished economic position. The triumph of the Nationalist opposition under Franco set the pattern of economic organization; the chaos and destruction caused by the war made economic revival and the effective operation of any system extremely difficult; the death, exile and imprisonment of skilled workers, as well as many leaders of industry, finance and government, etc., and the outbreak of World War II left Spain more or less isolated and delayed her economic recovery.

Portuguese Nationalism

During this same period, Portugal had continued to move in the direction of an agricultural economy with a very light industrial base and under strong nationalist control.

World War II

The outbreak of World War II, throughout which both Spain and Portugal remained neutral, found economic activity in the Peninsula at a very low ebb: a small country, poor and mainly agricultural, and a larger country whose economic output had been sharply curtailed.

Within a short time it became apparent that neutrality in modern war-

fare is a mixed blessing. The imposition of blockade controls and regulations by both belligerents placed very grave limitations on economic relations with the outside world—even with the islands and colonies of the mother lands. Throughout the war, the loss of many normal markets, the shutting off or decrease of essential imports, the lack of adequate shipping, the loss of most financial relations with the United Nations, combined with other factors to restrict economic activity and welfare in the Peninsula. These were the costs of neutrality and they were borne by all the people; the benefits of neutrality, in an economic sense, were restricted to a fortunate few. The scramble for strategic materials by both belligerents resulted in sharp expansion of output and fantastic price increases for a few commodities. The most important prize in this competitive buying was wolfram (tungsten), an essential alloy material for many high-grade steel products. Whereas Portugal produced a moderately large quantity of wolfram in prewar years, Spain produced little or none. By 1944, production in the Peninsula had reached a rate several times the prewar level of output and prices had been driven as high as 25 times the world level. At times farming in certain areas was abandoned completely in the wild rush to "scratch" for wolfram—a rush that can only be compared in frenzy and intensity to the Gold Rush days in California and Alaska. The favored few, who owned or could acquire these goods for sale to either side, reaped substantial gains. One result, however, was further impetus to the cycle of inflation already put in motion by short supplies and nationalist policies, which meant greater hardship for the great mass of the people and even less incentive or possibility than before for rational adjustment of the internal economy to the normal needs of the area and to normal trade with the rest of the world.

Effects of Economic Isolation

Spain has been partially cut off from normal economic life for ten years—Portugal for a shorter period. During this decade, necessity has given impetus to the nationalist doctrines already established as the policy of these countries. The production of hundreds of items formerly imported has created a tremendous vested interest on the part of government and business in maintaining controls which will enable these interests to survive. The personal economic stake in control, and nationalism, have come to outweigh all other considerations in the minds of government officials and business leaders—who indeed are often the same persons.

On the other hand, the observer is frequently impressed with the fact that new and enterprising leaders in business and finance look for every opportunity to throw their weight against this exclusive system—if only because they are "out" and desire to be "in."

PRESENT ECONOMIC POLICIES AND PROBLEMS

Commercial Policy

One must remember, however, that few indeed are the officials or business men in the Peninsula whose conception of international or national commercial policy is that of the United States. Indeed, it is not only in the Peninsula that other conceptions of commercial policy occur, but in a good many other countries as well. The advantages and benefits of relatively free international trade and a competitive internal system have not received general acceptance in the Peninsula. Nor is it clear that the existence of liberal governments in Spain and Portugal would have a profound effect on the freedom of commerce. Rather, the emphasis would be on continued control but by other groups and for other purposes. Nevertheless, there can be a tremendous difference between rational control and control by and for special interests, if the former is carried out in conjunction with the realities of the economic system in mind. To what extent freedom of enterprise and a liberal policy in world trade would be established by such opposition groups is, of course, in doubt and depends upon the specific nature of the political groups in authority. But the principle of autarchy, at the least, should receive a major blow.

Spain must some day be accepted into the United Nations. To do this, her government must be divorced from the factors which have brought about her exclusion. Such a government, when it comes to power, will find few of the economic scars of the Civil War left perhaps, but instead a host of economic problems resulting from the impact of World War II and the years of power of the present regime. Economic reform is necessary and will undoubtedly occupy much of the attention of this Government, but caution must be exercised to the end that the conditions of economic revival and prosperity (discussed more fully below) are established.

Relation to General Social Program

The objectives, in the writer's opinion, must be full employment and maximum efficiency in the organization of the economic system, with consequent maximum standards of living, as well as a maximum of the other social objectives which will undoubtedly be a major part of the program. The same observations apply in general to Portugal. In both countries the crying need is for an efficient utilization of the economic resources and possibilities to the end that a maximum standard of living be attained. But since there are other ends of national life and since the various ends may be in partial conflict with each other, it is important that the policies and goals to be adopted be stated clearly, that the nature and limits of economic activity within the countries and in external relations be so clearly developed

and stated that there will be little room for that doubt and indecision which is so stifling to economic enterprise.

Population and Capital Supply

Superficially it might appear that both Spain and Portugal suffer from over-population—that the low standards of living of the people result from the inexorable pressure of too many mouths to feed in a given area. The Iberian Peninsula has, indeed, a greater density of population per square mile than most areas of the world; but this condition cannot be held responsible for the low standard of living.

Every schoolboy knows that the Dutch, the British, the New Yorkers, have achieved a very high rate of population density without a condition of "population pressure" or any general notion that these areas are "over-populated." We need only apply the most elementary tool of analysis and express the truism that the standard of living of a people depends not upon any one factor of production, such as land, but on all three factors—land, labor, capital—and also on the methods and efficiency with which these factors are employed for the satisfaction of domestic needs or exchanged for the products of other areas.

Spain and Portugal are over-populated only in the sense that they are also under-capitalized and, perhaps even more important, under-enterprised. The quantity, type and utilization of capital in the Peninsula is simply not great or efficient enough to support the existing population on a higher level with the given resources and their utilization. Again, adequate statistics are not available but it is probably safe to generalize that the Peninsula has not increased its supply of usable capital even at the rate that might be expected from the level of the economic output of the area. Instead the investment has been allowed to leave the country, to be used for the satisfaction of uneconomic operations protected by a controlled economy, to be used for the satisfaction of other objectives personal, imperial and propaganda. Nor have the conditions of economic and political life encouraged the influx of foreign capital and enterprise that might have raised the level of economic activity. Where such investment has taken place it has often been true that the benefits to the Iberian economy and the economic level of the people have been rather less than might have been possible under better commercial and political conditions.

Not only is there a great deficiency in capital, but the economic system is so organized that millions of persons live almost entirely on the product of their own labor applied to land with little or no capital or technical knowledge to assist in the productive processes. Furthermore, as will be discussed in greater detail below, the economic system as a whole does not make the most efficient use of the capital available. The result of all this is inevitable—a low standard of living.

POTENTIALITIES OF IBERIAN ECONOMY

To attempt to depict the future economic conditions in any country, even under clearly defined conditions, is extremely difficult and perhaps rash. Nevertheless, let us examine the potentialities under the assumptions that no internal obstacles of an over-all or unusual nature militate against maximum employment and national income and that world economic conditions are equally favorable.

Economic Improvement Possible

Under such conditions, the Iberian Peninsula would experience a slow but steady increase in national income and a sharp revival in her normal commerce. By this it is not meant that the increases referred to will be phenomenal but merely that steady improvement and progress should manifest themselves. There exists in Spain and Portugal the nucleus of basic raw materials, the labor, the capital, and the business enterprise, which if supported by adequate imports of capital could maintain relatively important mining and manufacturing activities, as well as basic and provisional agricultural activities.

Basic Assumptions

Let us assume that the factors of production in the Peninsula (other than natural resources) have undergone certain changes. These changes may be summarized as follows:

A. Labor.

1. Improved level of education, vocational skills, etc., among a larger proportion of the population.
2. Shift of workers from marginal agricultural occupations to industry.

B. Capital.

1. Creation of new capital equipment sufficient to establish the same per capita ratio as in, say, France.
2. Elimination of sub-marginal uses of capital and transference to more efficient utilization.

C. Absence of autarchic economic controls within the Peninsula.

Given these conditions, a brief sketch of the Iberian economy, with necessary allowances for error and generalization, and subject to the elements of human choice and desire, might resemble the following pattern.

Agriculture

Agriculture, using modern methods of production, increased irrigation facilities and more adequate fertilizer could undoubtedly achieve a sharp increase in total output with fewer acres under cultivation and a decreased

labor force. Some imports of food would still be necessary but in terms of value such imports should be less than exports of food surpluses. Fishing will continue to be a major occupation, both for domestic consumption as well as export. In the latter connection, an expansion and improvement in the production and export of tinned fish would be quite possible.

Improvement in the quality of sheep and cattle as well as an increase in sheep and cattle numbers on the marginal farm lands vacated for more intensive agriculture would provide raw materials and food for domestic use as well as for processing for export trade. Such standard export commodities as naval stores, cork, wine, citrus fruits, olives, olive oil, etc., would continue to provide a basic portion of the export trade. However, a more intensive cultivation of those products for which expanding export markets are possible would enable the importation or domestic production of many other items for domestic consumption. For example, the well-established practice of importing cheap vegetable oils and exporting expensive olive oil is a case in point. The food value available to the producers remains constant, and a handy surplus in foreign exchange results which can be used to purchase needed imports. In addition, if the vegetable oils are imported in the seed or nut form, the oilcake residue is a welcome and necessary livestock feed at the same time that a crushing and refining industry is maintained.

A decrease in grape cultivation (discussed below) would release factors of production for other needed activities yielding a greater return in terms of national income and more susceptible to the use of improved methods of agriculture.

Industry, Transport and Power

The basis of modern industry is steel. While Spain is practically self-sufficient in steel (aside from exceptional needs and special products), Portugal is almost completely dependent upon imports to meet her requirements. Spanish production could be expanded quite easily if sufficient coal were available, a matter to be discussed below.

Spain and Portugal both require transport and power equipment. Expanded and improved rail service and an enlarged system of roads and trucking service to supplement and feed the railroads are absolutely essential to the economic improvement of the Peninsula. Equipment and materials to build roads and railroads must be provided in considerable part from abroad. Since they cannot be paid for on a current basis, even if this were desirable, they will require long-term credits from abroad.

The Peninsula must have a more adequate power system, a system which is not solely dependent on natural rainfall for its motivation. Such a system can be established under the same conditions as outlined for transport equipment, and at the same time, can provide for adequate irrigation and ad-

ditional industrial power. The development of adequate power facilities has been an objective in the plans of the Spanish Government, both under the Republic and the present regime. The critical shortage of rainfall for water power in the last few years has aggravated a chronic power shortage. The extensive hydroelectric facilities which are required can, of course, be combined with much needed irrigation and related projects. But such a program, so basic to the economy of the Peninsula, requires very large capital outlays.

The investment of relatively small sums may well improve the quality and quantity of coal production, although some imports, especially of certain grades, will probably remain necessary. If adequate power can be developed without the use of coal and perhaps even with less coal than is now so used, iron and steel expansion will be encouraged and facilitated, as will other related industries.

A Secondary Industrial Revolution

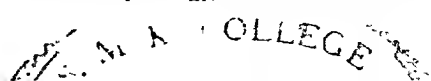
In short, with sufficient capital, Spain and Portugal would be likely to experience in the post-war world the kind of secondary expansion which the United States achieved in the late nineteenth century—an expansion of capital plant, the laying of industrial foundations for increased manufacturing, a shift of population from the farm to the city, from agriculture as a predominant occupation to parity between agriculture and industry. Mining will certainly be developed and improved as costs are reduced with technical improvements; raw materials and some fabricated products will remain important on the import side of the ledger; exports will be mainly foodstuffs, extractive products and only to a small extent manufactures and semi-manufactures.

LIMITING FACTORS

Thus far, the discussion has been limited to what has been and what could be. We have described briefly the optimum conditions of a post-war Iberian economy. Such conditions do not now exist, however, nor do they seem likely to exist in the near future. Aside from dependence on world economic and political conditions and the vagaries of domestic politics, the future of the economy of Spain and Portugal depends in the main on the attitudes and policies adopted with regard to certain basic questions of economic philosophy. Such questions may be discussed, roughly, under three main topics: Economic nationalism, internal economic restrictions, and stability of political life.

Economic Nationalism

The arguments against economic nationalism and bilateral arrangements are certainly not new, but unfortunately they have not yet been vic-



torious in the Peninsula. Economic nationalism has assumed modern forms such as payments agreements, clearing accounts, etc., but the same objectives remain. These controls act to reduce the free exchange of goods between nations, especially when used to support a political nationalism. The old mercantilist conception of "home manufactures" still rules and valuable factors of production are used to make poor imitations of goods which could be bought more cheaply from abroad. And the factors of production that might have produced the means of paying for these imports are deprived of the right to higher wages, rent and interest, which in turn retards other economic activities. Controls, at best, must be carefully integrated to achieve a desired result, as we have learned in the last few years; to fail to integrate or to manage them well is to lose whatever advantage might have accrued from their use and to sharpen and intensify the ill effects which attend them. An important aspect of the "controlled trade" point of view is the attitude of Spain and Portugal toward their colonial possessions. The methods of control have, in general, restricted the growth of an expanded and more diversified economic life. This restriction has perhaps led to benefits for a few individuals in Spain and Portugal, but it has decreased the mutual and general benefits that might have accrued to the Peninsula and the colonies alike had trade expansion been encouraged, especially with areas outside the national control.

Grape Cultivation Over-extended

Spain and Portugal, for example, devote a tremendous proportion of their productive energies to the output of grapes for wine manufacture, yet at the same time tremendous sums of foreign exchange must be used annually for the importation of cereals, mainly wheat. It is, of course, a matter of choice, and if Iberians prefer wine to plumbing or washing machines, no one can argue the matter. But it can be pointed out that a choice does exist and it can be questioned whether the same choice would be made if the alternatives were clearly understood.

Internal Economic Controls

The second of our general economic questions deals with internal economic controls. Such controls are, of course, only another manifestation of economic nationalism as applied to internal problems.

The Gremio and Sindicato

No better illustration exists than the *Gremio-Sindicato* systems and mentality. In Spain and Portugal there exist a vast number of official and semi-official bodies of which the *Gremio* in Portugal and the *Sindicato* in Spain are the most familiar to foreign business men. These bodies are

usually organized along functional lines, e.g., rice-growers association, steel importers, fish exporters, etc., the membership of which consists of all firms licensed to trade in that particular field. We are not concerned here with the ethics and justice of a *gremio* system, but only with its effect on the economic life of the nation. Trade associations can play an important role in economic development and undoubtedly many benefits have accrued to the economies of Spain and Portugal as a result of their existence. However, there seems to be no question but that the *gremio* or *syndicato* becomes very rapidly an exclusive body designed to keep others out and to divide up the business for those already in. Thus the competitive incentives are greatly reduced without the substitution of any other mechanism, private or public, to provide the incentive and progressive thinking necessary to a dynamic economic system.

Exchange Rates and World Prices

The development of the internal economy as well as of foreign trade is likewise dependent upon a realistic adjustment of internal prices and foreign exchange rates which must be undertaken at once. It is no longer meaningful to describe the heights to which legal prices have risen in Spain and Portugal, and black market prices have soared even more. An adjustment to world prices is absolutely essential to an economic revival, both internally and in foreign trade. In this connection the removal of those internal price controls which foster or discourage particular imports according to the interests of those in authority is a major case in point. Above all else, the values of local currencies must be related to the currencies of other countries at reasonable rates of exchange that express the approximate relative worth of these currencies. Admittedly the peseta today is overvalued at the legal rate of 11 to the U.S. dollar, although there is considerable dispute as to whether the rate ought to be 16, 18, or 20 to the dollar. How this adjustment can be made without an internal deflation or inflation is a serious transitional problem, but one that must be faced.

The sacrifice of export markets to other objectives is nowhere better illustrated than in the obstinacy by which an inflated value of the peseta is allowed to reduce exports or make them impossible by arbitrarily raising the cost to the importer at the same time that the basic internal price is allowed to reach fantastic heights. It is this fact which Spain and Portugal must face: that the full economic benefits of the present day, the benefits of labor-saving machinery, mass production and low costs, can only accrue to those nations which are part of the world economy. No social or economic or political system within the Peninsula can hope to survive if it does not face this issue.

Political Stability and Capital Imports

The third condition of economic progress is the degree of political stability which may exist in the Peninsula. This chapter is a summary of economic factors so it is not germane here to discuss political issues as such. Suffice it to say that economic progress cannot take place without the provision of much larger quantities of capital than the Peninsula could or should provide for itself. Since the capital must come from without, it is safe to argue that it will not be forthcoming in sufficient quantity unless political conditions within the Peninsula are at least as "safe and stable" as foreign investors may find them elsewhere in the post-war world. Such conditions can exist only if the great majority of the people of Spain and Portugal have confidence in their governments and if these governments have removed the obstacles which now make such investments economically or politically unsound. Nor can internal confidence and stability be achieved by recourse to external criticism and other nationalist appeals, for even if successful such action would further discourage the entrance of foreign capital and deepen the economic isolation of the Peninsula. Given reasonably stable governments in the Iberian Peninsula, however, and given even a part of the conditions described above, the post-war period should witness a relatively rapid and productive growth in the economy and improved conditions generally for the people of the Iberian Peninsula.

*ITALY'S INDUSTRIAL DEVELOPMENT**by* BRUNO B. A. LUZZATTO

I. INTRODUCTION

The final phase of the war in Europe totally changed the gloomy forecasts of destruction and hopeless destitution in Italy which prevailed as long as the battle was raging south of the Pisa-Rimini line. The integrated efforts of the Allied Armies and of the Italian partisans and workers in the North saved from destruction the best of Italy's industrial resources.

There was, nevertheless, widespread war damage to almost every Italian city from Palermo to Naples, from Florence to Leghorn, to Milan, Turin, Genoa. In addition, many smaller towns were utterly destroyed, such as Cassino and Terni, and the power plants and railroads in central Italy were crippled, Italy's merchant marine largely disappeared and the Germans methodically plundered whatever could be moved. It will take years of hard work and extensive economic assistance from abroad before even the low prewar standard of living can be regained.

Italy's economic structure is, however, by and large, safe. Post-war industrial developments will therefore be largely determined by the same general permanent factors which directed the economic growth of the country before it was overrun by fascism and war. There are several new elements which will greatly affect these developments. First is the utter defeat of Germany and her disappearance as the politically and economically dominating power in Europe. Second is the appearance of Russia on the economic scene as a large potential market for finished goods and as a supplier of raw materials. Third, and potentially most important, is the establishment of a world organization for the purpose not only of maintaining peace but also of improving economic conditions through economic co-operation.

Italy's agricultural development practically reached its peak as far as employment is concerned, future expansion of the Italian economy will occur mainly in the fields of industry and related activities. The place of industry (including transports and communications) in its economy is by no means negligible.

In 1936 industries gave employment to 33.1 per cent of the total

labor force of 18.3 million people, while 48.2 per cent were engaged in agriculture and forestry and fishing. The proportion industrially employed, however, was far smaller than that of England (55 per cent), Belgium (54.6 per cent), Germany (44.3 per cent), Switzerland (46.3 per cent), all countries having roughly the same density of population as Italy. A higher level of industrialization was reached in northern Italy, where the industrial population represented 50.4 per cent in Lombardy, 39.3 per cent in Piedmont and 47.1 per cent in Liguria, with an average of 38.4 per cent for all the northern regions.

Industry's contribution to national income was 30 per cent of the total, while agriculture contributed 36 per cent, rents 4 per cent, commerce 5.4 per cent, banking and insurance 1.2 per cent, professional activities 4 per cent, public employment 12.3 per cent, interest on credit 7 per cent.

II. WAR DAMAGES

Before any further expansion of industries can be undertaken, Italy will have to repair the damage wrought by war. Several estimates have been made but both the evaluations in local currency and their conversions to dollars are open to many questions.

The Italian Minister of Reconstruction suggested, at the end of 1945, a figure of 2,000 billion lire (which would correspond to 10 billion dollars), valuing as the Italian Administration did at that time the lira at one-tenth of its prewar parity. Leading Italian economists have made estimates of war damages ranging from eight and three-quarters billion dollars (prewar value) to as high as 16 billion dollars.

More recently (summer, 1946), in a memorandum dealing with "economic and financial questions connected with the Peace Treaty" presented to the Allied delegates at the Paris Conference, the Italian Government outlined the extent of war damages suffered by Italy. Total damages of economic nature (excluding damages to works of art and financial losses) are valued at 3,029 billion lire which, converted into dollars at the rate of one dollar for 225 lire, gives a total of some 13 billion dollars. The conversion factor is questionable since the lira is worth only about two-thirds to one-half of its "official" value. Since information of damages has been collected over a long period of time during which prices have changed, it is fair to use a lower rate, roughly 300. The Italian estimate thus corresponds to a damage of slightly less than 10 billion dollars. Damage to housing, estimated at between one and two billion dollars, comes first in the list of damages. Railroads and industry account for more than one billion each; merchant marine, agriculture, and public buildings and institutions for slightly less than one billion each.

With the destruction to industrial and transportation facilities, the cutting off of southern Italy from previous food supplies from northern Italy

and coal supplies from Germany, and the disorganization of industry and commerce by continuing military operations, Italy suffered an acute food shortage after occupation by the Allies. This continued for a considerable time after V-E Day. The first weak governments had little experience or administrative power, while the Allies were reluctant to aid Italy, as a former enemy power. Eventually, and largely due to United States initiative, UNRRA assumed relief responsibility for Italy, and it appears that similar help will be needed for a year or two ahead before Italy can meet its own food needs. The awards of 375 million dollars for reparations to Ethiopia, U.S.S.R., Yugoslavia and Greece for damages done by the Italian invasions will be a further drain on the recovery of the Italian economy.

III. RECONSTRUCTION AND FOREIGN HELP NEEDED

Italy's national income in 1938 was estimated at 5 to 6 billion dollars. Thus the damage caused by the war exceeds one year's national income of the prewar magnitude. Unless foreign assistance can be obtained, rehabilitation may require a decade or more, since Italy would have to start from a much lower level.

Since it is desired to repair the ravages of war as fast as possible and to improve the lot of the common man the world over, the aim should be to achieve rehabilitation within five years. That can only be done with international co-operation and careful planning. Before considering how far foreign financial help might be available, the help really needed may first be estimated.

For the purposes of planning, the period of reconstruction may be considered as beginning on January 1, 1946. The size of imports for the purpose of reconstruction depends on the length of time allowed, on the extent of over-all destruction and on the domestic productive capacity which can be put to work.

In the light of the present evaluation of damages, aggregate reconstruction imports of one billion dollars would seem to be desirable. This amount would include capital equipment, especially cargo ships, farm machinery, port equipment, steel and steel products and other items which are normally produced locally in sufficient quantities, but which would have to be imported in large quantities during the reconstruction period. It would also include materials needed for the re-establishment of working stocks. Part of these could be supplied by European manufacturing countries such as Switzerland, Sweden, Czechoslovakia and the United Kingdom, but if funds were available it is likely that the United States would be the largest supplier.

By far the largest share of the reconstruction burden will, of course, fall on Italian industry, if the necessary fuel, raw materials and some finished

products can be made available. Accordingly, the prewar flow of "normal" imports should continue with some modification due to changes in the economic pattern. Expressed in 1945 dollars this would mean that an additional 800 to 1,000 million dollars worth of goods should be imported per year.

Prewar Italian exports amounted to about 500 million dollars (prewar exchange rates and prices). The reduction of the total domestic productive capacity and the concentration of most of what is left on reconstruction work, the necessity of finding new markets, especially for the products such as fruits and vegetables which previously went to Germany, will drastically curtail exports. These will be very small in 1946, about 150 million dollars at the best, and might with good speed in reconstruction increase to 400 million in 1947 and to 700 million in 1948, 900 million in 1949 and 1,000 million in 1950. During the five-year reconstruction period, against import requirement of 6.250 billion dollars, there would thus be at best only about 3.15 billion dollars' worth of exports. The five-year aggregate deficit of the balance of trade will thus be about 3 billion dollars. (Any reparations payable in this period would have to be added to this total.) During the first years "invisible exports" will scarcely affect the over-all picture, since the foreign exchange that Italy will receive through them will be largely absorbed by non-commercial expenditures abroad but starting from 1947 such invisible exports as emigrants' remittances, tourists' expenditures, shipping earnings, etc., may play an important role in the balancing of Italian imports: 100 million dollars in 1947, 150 million dollars for 1948, and 200 million dollars yearly for 1949-1950 seem reasonable expectations. The deficit for the period 1947 through 1950 would thus be reduced to 2,000 million dollars.

FOREIGN ASSISTANCE NEEDED IN ITALIAN RECONSTRUCTION
(\$000,000)

Year	Imports			Exports			Deficit	Financing needed	
	Recon- struction imports	Normal	Total	Com- modities	In- visible	Total		UNRRA	Loans
1946	450	800	1,250	150		150	1,100	450	650
1947	350	900	1,250	400	100	500	750		750
1948	200	1,050	1,250	700	150	850	400		400
1949		1,250	1,250	900	200	1,100	150		150
1950		1,250	1,250	1,000	200	1,200	50		50
Total	1,000	5,250	6,250	3,150	650	3,800	2,450	450	2,000

The financing of this deficit represents a serious problem of the reconstruction period. It is likely that several ways will have to be followed at

the same time. Taking as a guide the above table, the following plan could be considered:

In 1946 the basic needs of food, coal, fuel, clothing and medical supplies, amounting to say 650 million dollars, were financed by UNRRA and by the Italian Government with its own resources, such as dollars from payments to occupation troops and from exports. The balance needed for reconstruction of the economy has not been forthcoming, so that the recovery has proceeded at a slower pace, and the situation at the end of 1946 will not be as promising as might have been expected. The loans for the subsequent years might be handled by the International Bank for Reconstruction and Development. Reconstruction loans totaling \$1,950,000,000 at an interest rate of 3 per cent could be repaid in thirty years by an annual payment of \$100,000,000 for interest and amortization. The national income would be very low at the beginning of the reconstruction period, but would progressively increase and surpass the prewar level of 6 billion dollars in two or three years. The interest and amortization of foreign loans contracted during the reconstruction period would therefore represent only about 3 per cent of the national income. If the efforts for world-wide co-operation in the economic field should reach fruition, the transfer problem should not constitute an insurmountable obstacle since it would be sufficient to increase the yearly total of exports, tourist expenditures, services rendered, remittances, etc., up to, say, 1,300 million dollars, while keeping the imports of goods and services around 1,200 million dollars.

This picture of how Italian reconstruction might be financed is admittedly an optimistic one. As matters stood in late 1946, the International Bank was just getting started and the United States Export-Import Bank had been exceedingly chary about large-scale commitments for reconstruction. Furthermore, as an ex-enemy, Italy may not receive as favorable treatment as full-fledged allies like Poland, Yugoslavia, and Greece, even though the under-ground Italian resistance movement did render valuable service in the closing months, and even though many Italian patriots lost their lives resisting the Germans. In view of the 8 billion dollar authorized capital of the International Bank, only a small part of the two billions needed by Italy is likely to be forthcoming in the near future. Italian recovery is therefore likely to depend much more on domestic efforts and to move at a much slower rate than these favorable calculations indicate would otherwise be possible.

IV. ELEMENTS OF LONG-RANGE PLANNING

During the initial period, speed in the restoration of basic facilities will be the principal factor to be considered. But it will be essential in order to avoid waste of already depleted resources to have an outline of the avail-

able resources and factors and to establish priorities for activities which will most contribute to the permanent economic welfare of the country.

a. *Population, Man Power, Jobs*

The foremost resource which Italy can count on is her good and inexpensive man power. The national goal will be, of course, to make this man power even better, but much more expensive. However, during the reconstruction period and for many years afterward, Italy will have to base her economic revival on the skill and relative cheapness of her labor. In an expanding world economy, with equal access to raw materials and fuel, this should be considered within certain limits as an advantage. Only insofar as the above assumptions are not satisfied will wholesale emigration to neighboring countries and overseas become imperative.

In the present phase of development of mankind, with the raw material representing less and less of the cost of the final product, it is logical to move materials to people rather than people to materials and markets. A faster and better organized movement of goods from where they are produced to where they are needed should tend to eliminate the problems of overpopulation.

The present Italian population, after the repatriation of prisoners of war and camp internees, is about 45.5 millions. For all practical purposes we may use the figure 46 million as the actual population during the period considered in this chapter.

Towards the end of the reconstruction period, when the problem of "jobs for all" will begin to approach solution, it may be assumed optimistically that improved education and social security provisions will eliminate from the labor market persons below 14 and above 65 years of age. This would leave a potential labor force of 29.3 million, of whom 13.8 million will be men and 15.5 million women. It must be expected that the number of women seeking employment outside the household will rise to about 7 million. Thus the number of job seekers would total about 21 million.

All analyses of the condition of Italian agriculture and of its place in the country's economy show that productive agricultural employment cannot increase above 8 million. Thus, 13 million "jobs" will have to be provided in nonagricultural activities. This is over 5 million more than in 1936, when employment in nonagricultural activities numbered 8,758,000.

From 1936 to 1940 the index of industrial activity rose by 28 per cent, but most of the increase took place in war industries or was due to increase in shifts. It cannot be assumed that much of this expanded industrial capacity will be useful for peace production. The starting point thus remains at some 6 million industrial jobs plus some 3 million of other non-agricultural jobs, making a total of 9 million jobs available after rehabilitation.

Unless more employment is created, and with agricultural employ-

ment remaining what it was, there could result a deficit of some 3 million jobs. Unemployment which was 1.5 million in 1936 would be increased by a large portion of the increment of population of working age. This is the long-term prospect in case no expansion of industrial production occurs. During the early period of reconstruction, unemployment will rise to several millions in any case because of the lack of fuel, raw materials and transportation. It is important that new jobs be created soon, for no social structure would be able to withstand such a stress for a long time.

b. *Sources of Energy*

Until the time when new atomic sources of energy become practicable, humanity must rely on fuels (coal, mineral oils, natural gases, firewood), water power and wind power.

Italy's power economy is characterized by a specially large use of hydro-electrical energy which, on the average of the years 1932-37, contributed 46.4 per cent of the total power output. The corresponding figures are 5 per cent for the United States and 10.7 per cent for France. On the other hand, solid fuels made up only 39.4 per cent of total Italian power production compared to 50.8 per cent in the United States and 76 per cent in France.

The minimum coal needs of Italy are about 12.5 million tons per year, most of which will have to be imported. Industrial reorientation and development should shift coal consumption from high coal consuming industries such as metallurgical industries to manufacturing industries such as mechanical, textile and chemical. However, in view of the low per capita consumption and the necessity of intensifying the industrial activity, it is to be expected that, in the long run, the coal consumption will tend to increase.

While water power provides the largest share of Italy's energy requirements and represents the only sizable natural resource available to her, it is not as plentiful as generally believed.

In 1941 about 18.5 billion KWH were produced in Italy, corresponding to about 450 KWH per person per year. In the United States, the TVA alone produced in 1944 at the rate of 12 billion KWH per year (about 2,700 KWH per person per year in the TVA area). Including electric power produced in steam-plants, the total electricity available per capita is 450 KWH in Italy, while it is 1,700 KWH in the U.S.A. The electric power industry was nevertheless one of Italy's faster developing activities, having increased its output from 14 billion KWH in 1936 to over 20 billion in 1941.

In 1940 plans were ready to increase the production further up to 25 and possibly 30 billion KWH. It was estimated in 1937 that the upper technical limit of the development of Italy's water-power resources was 57 bil-

lion KWH per year, of which, however, only 32 billion KWH were considered within the realm of industrial possibility.

The pattern of consumption in 1939 was as follows: domestic and public lighting and appliances absorbed about 10 per cent of the total, traction (railroads and streetcars) about 11 per cent, food industries and agriculture some 6 per cent, electrochemical and electrometallurgical industries and industrial heating (aluminum, magnesium, electric steel, calcium carbide, etc.) about 36 per cent. The balance, some 37 per cent, was used by miscellaneous industries.

Complete data for later years are not available, but it is known that the additional 2 billion KWH which were distributed in 1942 were absorbed largely by the electrometallurgical industries (especially aluminum, magnesium, iron and ferro alloys), electrochemical industries and by transportation.

As indicated before, war damages to the electric power system have been serious only in central Italy. They will be repaired without delay so that it is possible to assume that in 1947 Italy will again have a productive capacity of 20 to 21 billion KWH.

It appears, therefore, that if proper measures are taken and the existing resources are properly used under a centralized control, enough electric power will be available and there will be no necessity for new power plants in the immediate future, with the exception of those required for compensating for the seasonal power shortage which occurs in the winter because of the freezing of the main watersheds. Public works for the purpose of absorbing temporary unemployment may, however, include the hydraulic and civil engineering part of water-power developments.

c. Italian Foreign Trade and Its Future Development

A lively foreign trade is the mainspring of the Italian economy. Italy's foreign trade during the period 1922-1929 averaged yearly 37 billion lire or 26 billion in terms of prices of the 1930's, while during the period 1930-38 the average fell to 18.7 billion lire per year. The average yearly increase of the production index (1922 = 100) during the first period was 14.9, while it was only 0.4 during the latter period. Italy's post-war goal should be an expansion of her foreign trade, with its composition guided by purely economic considerations.

During the early reconstruction period, when only the barest minimum needs of the Italian people can be satisfied, but allowing for the necessary reconstruction work, the "normal" imports might run at about 800 to 1,000 million dollars, while additional reconstruction imports will be necessary.

In the section on reconstruction indications were given as to the general magnitude of expected import needs and export possibilities during the years 1946 to 1950. Yearly imports are estimated at \$1.25 billion and

yearly exports at values rising from \$150 million to \$1 billion. Achieving this volume in Italy's post-war exports will entail special problems.

The first is the contraction of the German market. Germany absorbed 17.2 per cent of the Italian exports in 1937. The proportion grew up to 49 per cent in 1941 as a consequence of the war. The principal items were agricultural products, such as fresh vegetables, citrus fruits, grapes and textiles. It is unlikely that for many years to come Germany will be able to buy from Italy even as much as the \$140 million (at 1938 prices) which she took in 1937. New markets for the same products, possibly requiring different packing or processing, will have to be found.

The position that the U.S.S.R. had in the Italian export trade was insignificant—only 0.1 per cent in 1937 and, due to the anomalous situation then prevailing, 1.4 per cent in 1941. Great efforts are already being made, especially on the Italian side, to devise ways and means of expanding the trade between the two countries. Once Italian industry is restored, Italy will probably be able to export large amounts of textiles, durable consumers goods, specialized food, chemicals, machinery and ships, etc.

The United States' share of the prewar Italian exports amounted to 7.5 per cent, or about \$40 to 45 million (1938 prices). It is likely that the American market will be able to absorb much larger amounts of Italian products—not only the traditional cheeses, olive oil, tomato products and silk but also larger amounts of high grade textiles, artisans' products and all those innumerable items in the manufacture of which the inborn skill of the Italian craftsman can better be used. If high levels of employment can be maintained in the U.S.A., the standard of living of the American people is certainly high enough to justify the expectation that many more luxury items will find here an extensive market. Italian production may hope to take advantage of it.

India and China, which were negligible as markets for Italian products, will certainly play a larger role if those countries move forward on vigorous industrialization programs. Throughout Asia the disappearance of Japan as an aggressive exporter, at least for the time being, will open the way for a larger absorption of Italian manufactured products. In return, Italy would import raw materials (rubber, oils, etc.).

A large expansion of export is possible also towards Latin American countries, in which only Argentina in the past played an appreciable role.

Italy's prewar trade with her colonies became significant after 1935 but only on the export side. Exports to colonies which represented only 2 per cent of Italy's total exports in the period 1929–1930, rose to 5.87 per cent in 1931–1935 and to 26.3 per cent in 1936–38. During the latter period value of exports ranged from 1.7 billion lire to 2.6 billion lire. The most important items were flour and grain products, textiles, motor vehicles, machinery and equipment. Imports were almost negligible in 1926–1930 (51

per cent of total imports) and in 1931-35 (1.08 per cent). Even in 1936-38 imports amounted to only 2.32 per cent of the total. In value the peak was reached in 1937 when about 350 million lire worth of goods were imported. Italy thus shipped to her colonies far more than she got back from them. The loss of the political control over her colonies would be an actual economic advantage to Italy if she could still participate in their economic development to which the United Nations are pledged.

Italy's economic future depends on her foreign trade. A complete realization of the Bretton Woods-San Francisco plans will be of great assistance to her. Italy, more than any other nation, needs peace and security. Her geographic position, while advantageous in a world at peace, is desperate in wartime as was clearly shown by recent events. It is hoped the Italians have learned their lesson. They cannot, however, settle down and work hard for the revival of their country if the nightmare of being caught in a struggle for world supremacy is not once and for all dispelled. In a future world conflict, Italy's position in Europe might become similar to that of Poland in 1939. If, however, the new world security organization proves to be a success, the Mediterranean Sea may again become one of the main highways of traffic between east and west and Italy's position may again prove to be one of her main assets.

V. INDUSTRIAL DEVELOPMENT

The previous analysis of the major elements which will set the pattern for the economic progress of the country shows that this progress will have to be made especially in the industrial field. Only there will it be possible to utilize the resources Italy has. Only through industrial development will the extensive foreign trade essential to any economic progress be possible.

The problems involved in industrialization will be considered for four major industrial groups: metallurgical, mechanical, chemical and textile.

a. *The Metallurgical Industries*

The metallurgical industries never were very important in the Italian economy in spite of the fascist efforts to promote self-sufficiency in this field. In 1936, they employed 141,000 persons, or less than 3 per cent of all industrial workers. Total value of the output was 5,000 million lire.

Among the metallurgical industries the iron and steel industries, traditionally considered the backbone of any industrial economy, will probably never be restored even to the low prewar level. Italy's steel production was always very small. During the war pig iron output was expanded to 1 million tons per year; steel production to 2 million tons. These industries depend on imported coking coal and in part on imported minerals. Under these circumstances any profitable operation is unthinkable. Their develop-

ment in the past, under the protection of high tariffs, kept steel prices high and so prevented the expansion of other industries using steel products.

Italy should go back to the pre-fascist policy of importing steel scrap, steel ingot bars and sheets. This will be even more logical in the future since there will be a large steel manufacturing capacity in the U.S.A. which will be able to satisfy all possible Italian needs; the French, Belgian, Czech and Austrian steel industries will be looking for markets; and, finally, if an international control of the Ruhr area could be worked out a small fraction of the steel production of that area could be assigned to Italy on favorable terms.

Since the Italian iron and steel industry suffered very serious war damages, the reconstruction should be limited to the rearrangement of what is left with a minimum of new installations and avoiding any new developments. This does not apply to the production of special electric steel, steel castings, etc.

Along with the lessened emphasis on iron and steel there should be a reduction of mining of low grade ore. The effect on the industrial employment will be very slight since the entire iron and steel industry, from mining to steel products, employed only around 45,000 workers in 1938.

A different policy should be adopted with regard to the zinc and lead industries, which being based on domestic high grade ores require little coal and already have modern and well equipped plants. This is especially true for the electrolytic refining of zinc. The metal mining industry, moreover, represents an important part of the economy of Sardinia, which is otherwise a very poor area. From the point of view of alternative opportunities, these industries therefore justify this maintenance.

The aluminum industry was greatly expanded prior to and during the war and now has a productive capacity of 50 to 60,000 tons per year. It uses high-grade domestic bauxites and huge amounts of electric power from especially built hydroelectric plants. After the early period of reconstruction, during which the maximum production may be needed to satisfy domestic demands, a substantial margin for export will probably develop. The market for aluminum will be highly competitive, due to worldwide expansion of capacity during the war. Italy's export trade in this field, as in most others, will have to concentrate on manufactured articles for which the Italian industry is already well equipped. However, the very large absorption of electric power, already close to 2 billion KWH, or 10 per cent of the total power available, will prevent further expansion and may even, in the long run, represent a serious disadvantage for the aluminum industry.

b. *Mechanical Industries*

All experts agree that this is one of the most promising fields of future development. During the reconstruction period the mechanical industries

will play a predominant role in the rehabilitation work and, when the most pressing needs of the country are satisfied, an increased flow of exports is likely to develop.

It is especially in this field that Italy may hope to take advantage of the economic collapse of Germany which will so unfavorably affect other branches of her economy. Germany was Europe's foremost supplier of mechanical goods, from toys to electric generators, and her position in world trade for such articles was very important. If Italy could take over only a small fraction of these markets, directing her attention especially to the Balkans, the Middle East and Latin America, and could participate even in a minor role in the industrialization of India and China, a substantial expansion of the mechanical industries could be achieved. The background for such an expansion already exists. In 1938, 847,000 persons were engaged in some type of mechanical activity, of which 675,000 were in industrial enterprises. The total value of the production in 1938 was around 18 billion lire and 3.2 billion was paid in wages. Wages represented 41.1 per cent of the added value and 18.4 per cent of the total value of the products.

In automotive vehicles, which represented 40 per cent of the total production, the Italian mechanical industry was not, and probably never will be, one of mass production of standard items. Prewar production was protected by high tariffs, which prevented the import of cheaper American cars, and by the automobile tax, which favored smaller cars with smaller engines and reduced gasoline consumption. The sizable export of automobiles to Switzerland, Germany, and British and Dutch colonies and dominions was assisted by the government in various ways.

The immediate full capacity operation of this industry is assured by the tremendous demands of Italy's ravaged transport system. The possibility of exporting depends on the availability of cheap semi-finished products (especially steel) and on a concentration on high quality products and specialized equipment. It will, accordingly, never compete with the U.S.A. mass production; on the contrary, lowered trade barriers will make available to the average Italian American cars and to the Italian farmer standard American farm equipment at prices which the Italian industry could not, for many years at least, hope to beat.

Products of the mechanical industries accounted for 68½ million lire in the Italian export trade of 1938 (about 36 million dollars). The war damage to the mechanical industries should be repaired as promptly as possible, new equipment installed wherever needed. Plants which carried on war production as, for instance, the gun, machine gun and torpedo factories and those recently erected for the manufacture of aircraft engines, should be converted to peacetime production with the maximum possible use of all existing equipment.

c. *Chemical Industries*

The economic importance of the chemical industries was not very large in prewar Italy, but a steady expansion was in progress. While some branches will find it difficult to survive, deprived as they will be of the protection of high trade barriers, some new production will develop as soon as new raw materials become available and new techniques are adopted.

This group of industries gave employment in 1937 to 128,000 persons. The total value of the production was about 9 billion lire, of which about 500 million were paid in wages.

Classifying the various industries according to their percentage share of added value in 1938, the list is: distillation of (imported) coal 11.7 per cent; distillation and refining of (imported) mineral oils 8.6 per cent; chemical nitrogen 8.1 per cent; pharmaceutical products 8.1 per cent; soap and allied products 7.0 per cent; sulphuric acid, phosphoric fertilizers and allied products 6.7 per cent; alkali, chlorine, etc., 4 per cent; varnishes, paints 2.4 per cent.

For Italian agriculture the manufacture of superphosphates and of chemical nitrogen are of decisive importance. Production of both may have to be further developed.

The mineral oil refining industry may develop above the prewar level. During the period of autarchic dreams it was envisaged that the hydrogenation of the scarce domestic lignites could offer a solution of the gasoline problem. It is likely that in the future the agreements with the leading foreign groups in the petroleum field and with the governments of those countries which control the oil resources of the world will be less influenced by political considerations, and that the distribution of oil products to the Italian consumers will be open to everyone. This will help to reduce prices and make gasoline less of a luxury item than in the past.

Among the industries having a potential importance for export, there is the pharmaceutical industry, which has a long tradition of high quality. The Italian chemical industry will, by and large, be a subsidiary to other major activities such as agriculture, textiles, etc., since raw materials are lacking for its rapid development. The domestic market is not sufficient to support mass production, which is essential for such recent and most promising branches as the plastics industry.

d. *Textile Industries*

The importance of these industries for the Italian economy cannot be overestimated. In 1937 they gave employment to 628,000 people. The total value of their output was about 11 billion lire in 1938 (8 billion, materials and 3 billion, wages and other production services). The value of textile exports was 3 billion lire out of a total of 10 billion.

Until 1934 the industry was primarily engaged in processing imported raw cotton and wool. In succeeding years there was a progressive shift toward synthetic fibers, in a vain hope to assure self-sufficiency.

The cotton industry, the most important in terms of value of production and of employment, has a production capacity of more than 200,000 tons of yarn. Shortly before the war, it used 40 per cent of other fibers, mostly synthetic staple fibers, besides cotton. The total value of the production was 3 to 4 billion lire. Now that imported raw cotton will again be available to the Italian manufacturers, they will revert to the traditional suppliers, among which the U.S.A. came first with about 70 per cent. Their facilities having escaped serious damage, they will again be able to export a large proportion of their output, thus giving employment directly and indirectly to some 600,000 workers, most of them concentrated in two regions in northern Italy—Lombardia and Piemonte. During the second half of 1946 the export activity was extensive and further development is expected.

The wool industry is in a similar position. It employed about 80,000 people in 1938 and the total value of its production was estimated at 2.25 billion lire, of which 1.6 billion represented value added by manufacture. It relied almost entirely on wool imported from Argentina, Australia and South Africa.

The artificial textiles industry expanded very fast, especially after 1934. The increase in total production was from 51,000 tons in 1934 to 200,000 tons in 1941. The largest expansion occurred in the staple fibers substituted for cotton, which accounted for 67 per cent of the 1941 output. The direct employment in 1938 was only about 26,000 persons, but if the indirect employment in accessory chemical plants is taken into account, the figure is considerably higher. This industry exported up to 50 per cent of its output. Its dependence on imported cellulose is not too serious a handicap in normal times, and the autarchic attempts to manufacture cellulose for rayon from every possible odd plant and straw will probably be discontinued.

The industry, however, is faced with a number of problems. During the early reconstruction period it was handicapped by lack of coal, by the competition of relatively abundant cotton and by the relative scarcity of cellulose. That part of the industry which produced staple fibers had additional reconversion problems. In the long run it is likely that this industry will resume its important position in the Italian economy and participate in the export trade, especially with finished products.

The silk industry had been one of the cornerstones of the country's economy. Direct employment was 100,000 people in 1938, exclusive of the employment in the cultivation of mulberry trees and cocoons. In 1938 the total value of production was 2.5 billion lire, of which 2 billion represented added value. It was always primarily an export industry and was hit by Japanese competition, which took over the most important markets. After

a short period of export boom, due to accumulated demands, the same serious competition is likely to develop since Japanese silk will soon again be in the market. Nylon may also be a serious competitor. The Italian silk industry will therefore probably never attain its former importance.

VI. ITALY'S FUTURE

The question "what next for Italy?" calls for an interrogatory answer, "What's next for Europe?", or even "What's the future of mankind?" The Italian problem is not, in the long run, different from the problems confronting other countries including the U.S.A. The solution exists for all of them provided energy and vision do not fail and peace—real peace—will be assured. If the ideals which are the basis of our present endeavors to create a peaceful world are successful—freer trade, more international co-operation, greater industrialization—the Italian people, with substantial international assistance during the early phases, would be able not only to repair the ravages of war, but in due time to achieve a comfortable economic security. If the assistance is not forthcoming or is inadequate, their recovery will be much slower. The road is hard and steep, problems of all kinds will have to be solved; during this period it is very important for the peace of the world that the Italian people be properly assisted, guided and above all understood.

There is also the problem of how Italy can pay her heavy obligations for reparations and still make economic progress. The \$375,000,000 which the Paris Conference decided Italy should pay for the damage done Ethiopia, U.S.S.R., Yugoslavia and Greece will be difficult to pay, even over a long period. This will be especially difficult if the U.S. and other foreign leaders continue to insist that any future loans for Italian rehabilitation and development shall not be used even indirectly to pay off reparations.

Not all the problems are of an economic nature. There are some political problems which will greatly affect the direction and extent of economic progress.

In the domestic field the major issues are:

a. The form of the state. The decision in favor of the republican form of government, on which most parties agreed, has been one helpful factor in the stabilization of the political situation.

b. The structure of the state. The strong autonomistic trends in some regions, such as Sicily and Sardinia, hint at an extensive decentralization of the power of government. It is likely, however, that most economic problems will be handled increasingly by the central government.

c. The extent of state intervention in economic affairs. The trend toward nationalization of key industries (such as power and metals) is very strong and is being accepted even by so-called moderate parties. Extensive wholesale socialization, however, is not likely. Industrial co-operatives, espe-

cially in connection with agriculture, will become an important factor. Private initiative will always be the predominant influence in view of the traditional individualism and dislike for regimentation which characterizes the Italian people.

Italy is not going back to the pre-fascist era. The psychological, political and social consequences of the well organized and successful Partisan activities cannot be overlooked. For about two years large numbers of Italians, united in the perilous undertaking, fought and died, not only to liberate the country from the Nazi oppressors, but also to redeem themselves from the too long acceptance of fascist domination. The dreams of social and economic reforms born in the tense period of underground activity will make themselves felt for a long time and will affect the solution of most problems. If however, foreign assistance in industrial restoration is so meager as to cause these progressive forces to lose hope and courage, Italy might lapse back into disorganization and lethargy similar to that which preceded the Fascistic period.

The long period of fascist domination full of empty words and show-window prosperity made the Italians suspicious of words and of loud-spoken leaders. They are trying to establish true democratic institutions with all possible protection for free expression and popular control. The period between now and 1950 will be decisive for the future of Italy. If the international situation should allow her to become a bridge rather than a wall, her prospects for economic recovery and moderate prosperity are favorable. This dilemma "bridge or wall" will condition the Italian political scene until the issue is settled. Will it be soon or ever? This is the question that the Italians are asking themselves and are asking every American who visits Italy. The answer can only be "yes," if the promises of world prosperity are to come true.

CHAPTER XIII

THE MIDDLE EAST

by MAX J. WASSERMAN

The Middle East, the crossroads between Europe, Asia, and Africa, has one of the longest known histories of any region of the world, and has contributed greatly to the world's religion, science, art, and philosophy. Yet it is still one of the least developed regions of the world, and the great mass of its teeming millions live in abject poverty.

It is a region of great contrasts. The climate varies from very dry to heavy rainfall. Much of the region is bleak and barren desert of sand and stone, inhabited by nomad tribes, with the oasis, the camel and the date-palm the focus of their civilization now as in Biblical times. Other areas, in the coastal regions, irrigated valleys, and flood plains and deltas of the great rivers, the Nile, Euphrates and others, are densely populated agricultural regions, farmed by hard-working but illiterate tenants under traditional systems of land ownership which offer them little of hope or of knowledge. The agriculture includes, besides familiar crops and livestock, exotic crops such as figs and dates, and animals such as the water buffalo, camel, and fat-tailed sheep. Sanitation, education, provision for the sick, the orphaned, or the aged, are either unknown or of the most primitive types.

In other regions, systems of irrigation or flood control have been tied into more modern agricultural developments, with well-developed systems of education, health, and sanitation. For most of the region, the metropolises are equally ancient in type, with handicraft manufactures and bazaar merchandising dominating industrial and commercial activity.

In still other regions, as in the Palestinian settlements with their modern cities and industries and specialized agriculture, or in the advanced agricultural regions of Lebanon and Iraq, the practical application of science, technology, and capital has produced standards of production and of in-

Acknowledgments: In the preparation of this chapter the author has drawn freely from many reports, studies and memoranda prepared by specialists on the staff of the Middle East Supply Center, Department of State, Foreign Economic Administration, and British representatives in the Middle East and in Washington.

come which contrast greatly with the primitive conditions elsewhere. The introduction of the steamship, rail, and now air transport have also stimulated isolated spots of modern development which contrast sharply with their settings.

As presently organized, the economy of the region is not of great peacetime importance to the rest of the world. During the years immediately preceding World War II, and during the war, the area absorbed but from one-half of one per cent to one and one-half per cent of the total value of our exports and sold us a similar proportion of our total imports.

The importance of the Middle East, both from the point of view of strategic geography and oil reserves, is illustrated by the efforts made by the Allies during World War II to preserve peace and security in it, to keep it open as a vital route for Lend-Lease supplies to Russia, to maintain a friendly attitude towards the Allies and to prevent enemy activity from developing.

Until World War II, the interest which the European powers had manifested in the Middle East had done but little to improve conditions there. The instability of its political institutions and our lack of knowledge of its potentialities have done much to discourage private investment by Western capitalists. The principal problem of the Middle East is to solve the issue of the respective activities of the three Great Powers in this region and clear the way to assist the various countries in their own efforts of development, so that they will be able to raise their standards of living, contribute to world prosperity and stand on their own feet. A related problem is to *find ways to reconcile the interests of the Arab and non-Arab countries in the region*, as they have been sharpened by the formation and activities of the Pan-Arab League.

As covered in this chapter, the Middle East includes Libya (Tripolitania and Cyrenaica), Egypt, the Anglo-Egyptian Sudan, Ethiopia, British and French Somaliland, Eritrea, Palestine and Trans-Jordan, Syria and the Lebanon, Iraq, Saudi Arabia, Yemen, Aden and Aden Protectorate, Cyprus and Iran. These countries cover an area of slightly more than $4\frac{1}{2}$ million square miles, larger than either the United States or Europe, and have a population of an estimated 67 million. There are great differences in the economic development of these countries. Egypt is the wealthiest and, apart from oil, of the greatest commercial interest to the Western world. The following table shows the area and population of each Middle Eastern country.

By geography and population, Turkey also belongs in this group. In many respects, Turkey has pioneered among the Moslem countries in modernization efforts, particularly in agriculture. Since it was not included in the Middle East Supply Center, on whose activities much of this chapter is based, it is also omitted here.

THE MIDDLE EAST—AREA AND POPULATION

	Territories	Political Status	Area (sq. mi.)	Population
Mediterranean Group	Cyprus	British Crown Colony	3,600	385,000
	Lebanon	Republic under French Mandate	3,600	1,000,000
	Syria	Republic under French Mandate	54,000	3,000,000
	Palestine	British Mandate	10,400	1,600,000
	Trans-Jordan	British Mandate	34,000	340,000
	Egypt	Independent Kingdom	366,000	16,000,000
	Libya, including Cyrenaica and Tripolitania	British Occupied Enemy Territory	680,000	900,000
Persian Gulf Group	Iraq	Independent Kingdom	116,000	4,000,000
	Iran	Independent Kingdom	630,000	12,000,000
	Anglo-Egyptian Sudan	Condominium	1,000,000	6,400,000
Red Sea Group	Ethiopia	Independent Empire	350,000	10,000,000
	Eritrea	British Occupied Enemy Territory	64,000	800,000
	Br. Somaliland	British Crown Colony	68,000	400,000
	Fr. Somaliland	French Colony	8,400	50,000
	Aden and Aden Protectorate	British Crown Colony and Protectorate	112,000	650,000
	Saudi Arabia	Independent Kingdom	927,000	6,000,000
	Yemen	Independent Kingdom	75,000	3,500,000
TOTAL			4,502,000	67,025,000

POSSIBLE FUTURE DEVELOPMENT

Agriculture

With the exception of the oil industry, the Middle East is largely agricultural. As the developmental plans of these countries testify, farming offers the most fruitful field for development and the one that is likely to yield certain and immediate results. Agricultural commodities account for more than 95 per cent of the exports of each country of the region, except those producing oil, and with the exception of Cyprus which exports substantial quantities of minerals, Palestine, which ships polished diamonds, textiles and dental equipment and Syria which enjoys a small trade in silk goods and cement.

Nearly everywhere in the Middle East, agriculture is so deeply rooted in the past that it employs the same methods used in Biblical times. The principal improvements needed—and the Middle East countries are already at work on many of them—are in land tenure, irrigation, crops raised, methods of cultivation, storage and marketing.

Land Tenure

Perhaps the most important improvement, not only for the economic, but also the political development of the region, which could be made is in land tenure. Freeholding is not widely practiced in the region. Most of the

land is divided into large estates owned by wealthy and often absentee landlords who constitute the ruling class. The actual work is performed by the fellah, a peasant who, although free, owes so many charges to the landlord and government in the form of rents, fertilizer and irrigation fees, equipment charges, tithes and taxes, that but a small fraction of the farm income finds its way into his pockets. The system of land tenure is extremely complicated and cannot be outlined here. The results of the system is, however, all too evident.

The fellah is so poor, farms such small holdings, and has such meager agricultural skill judged by Western standards, that the crops are small in proportion to the effort expended upon them, and the soil fertility is declining. Both the incentive to improve farming and the ability to do so are lacking. The crops, when they finally arrive at the market, are poor. They have been wastefully harvested and processed and badly stored. New or improved crops, improved strains of livestock, and improved methods have not recently been introduced.

If agriculture can be sufficiently improved to raise the economic status of the fellah and at the same time provide the landlords with sufficient revenues so that they can afford to make concessions to the tenants, land tenure can be improved.

Turkey, although outside the Middle East as that area is defined here, has made great improvements in land tenure in recent years. Between 1930 and 1938, the Turkish government distributed 300,000 acres of land to refugees mainly from the Balkans. The "Law Providing Land for Farmers," approved by the Grand National Assembly on June 11, 1945, is designed to provide land to landless persons and to those having holdings too small to support a family. It will also provide credit for farmers and insure the continuous cultivation of all Turkey's land. Approximately five million persons, or a million families, will benefit from the law; 128,000 landless families and 875,000 families having insufficient land for adequate sustenance.

The land will be purchased from private landowners, reclaimed from marshes and acquired from municipalities. Where the land is expropriated, owners will be paid for it in annual installments of "Soil Bonds" issued by the Treasury bearing four per cent interest. The land thus acquired will be distributed to farm tenants and laborers, nomads, immigrants, graduates of agricultural schools, and city workers qualified to engage in farming. These new owners can purchase the land from the government in twenty annual installments, without interest, beginning on the sixth year following acquisition. The Agricultural Bank will furnish credit to the new owners for buildings, equipment and operations.

This law, benefiting about one-third of Turkey's farmers and affecting about 35 million acres out of a total of 57 million acres of arable land, is a

basic reform which is likely to have far reaching economic and political effects by raising the standards of living and social position of Turkey's relatively large farm population. It shows what can be done by governments of the area determined to raise the economic status of agriculture and which can command or procure adequate credit facilities.

Irrigation

Among the basic improvements in the arts of agriculture, irrigation holds first place in the Middle East. Much of the land is arid and a very large amount is not under cultivation for lack of water. For some time now, almost all of the countries of the region have had irrigation projects and much progress has been made in this direction in recent years. Many of these projects could be improved by international co-operation, due to the contiguity of many of the countries of the area and the common usage of rivers and water sources.

Further, irrigation is directly related to problems of land settlement and tenure, improvement of cultivation techniques and the entire problem of Middle East rural social life. Water is vital also to urban life, drainage, transport, power and domestic use.

Many parts of the Middle East suffer from an oversupply of flood waters at certain seasons. The problem of flood control should be considered at the same time that attention is given to irrigation. Dealing with the relationship of irrigation to flood control will involve co-operation between the countries of the area, as well as consideration of reforestation, soil conservation and fisheries.

The Middle East has long been aware of the importance of water control and some important irrigation projects are already under construction. In the Sudan, the Sennar Dam project which provides water from the Blue Nile for the Senna, Aroma and Gezira area all the year round was built at a cost of 56 million dollars. This project was undertaken by the Sudan in co-operation with the government of Egypt which, with its flood control, has a vital interest in the water flow of the Blue Nile. The irrigation system furnishes water for the companies of the Cotton Syndicate whose land is leased to the cultivators under model conditions of land tenure—the improved tenure was one direct result of the irrigation project. The cultivators working the land on this project were formerly wandering nomads or herdsmen who depended for food upon one good rain-grown crop of millet every five years. This project is susceptible of extension, especially by raising the level of Lake Tana.

In Egypt the problem of land reclamation by irrigation and washing to remove salt is particularly pressing. This country has a population of 16 million inhabitants and five million acres of land under cultivation. The population is increasing rapidly. More land must be reclaimed if further

heavy pressure of population on the land is to be avoided with the accompanying inflation of land values and the increasing division of already small holdings.

To meet this situation, Egypt has in operation and under construction several irrigation and reclamation projects. The irrigation system of the middle region south of Cairo and the reclamation project of the Delta are examples of this work. There is still room for the further development of the middle region project to prevent alkalization of the soil through more effective drainage. The Delta project of land-washing to remove the salt is also susceptible of further extension to include an additional one and one-half million acres.

The land reclaimed and irrigated on the Delta project is sold outright to the fellah by private companies which purchase it before reclamation and then reclaim it. These companies, foreign owned and financed, paid in 1942 about \$12 an acre for the unreclaimed land, met the reclamation costs, and sold it for \$120. The companies thus have a highly speculative interest in the project, but the fellah does acquire outright land ownership, albeit at a heavy price.

Palestine is today suffering from soil erosion and loss of surface water. The first steps in the direction of systematic reforestation have been taken since the Jewish immigration after World War I. Unfortunately, questions of soil conservation and irrigation involve questions of land ownership and Arab-Jewish relationships, which have served to retard the development of constructive programs of land conservation and irrigation in this country.

The irrigation problems of Trans-Jordan are similar to those of Palestine. Of its estimated population of 400,000, about 200,000 are settled, 150,000 are semi-nomadic and 50,000 nomadic. In the northwest section of this country settlement may be said to be complete. The average size of the land holdings is from 15 to 20 acres a family whereas 40 acres are required for adequate sustenance of the family group. The government had ample legal control of the forests, but since these regulations were widely evaded by the private owners, the government arranged to exchange its agricultural land for the privately owned forests, making it possible to develop better forest management practices.

The most important project for irrigation, water power and other related developments of interest to Palestine and Trans-Jordan is the proposal of Dr. Lowdermilk for a Jordan Valley Authority, patterned somewhat along the lines of the Tennessee Valley Authority. This project envisages a large-scale plan of water control, using the Jordan river water for irrigation as well as cheap power, which could be readily utilized in Palestine's rapidly increasing industrialization. His plan involves using all the

Jordan water for irrigation, and bringing Mediterranean water into the Jordan by canal and tunnel. This flow of salt water down to the Dead Sea would be used to generate large amounts of hydroelectric power. Large works to reclaim more of the potash and other minerals concentrated in the waters of the Dead Sea are also planned.

Syria comprises a total of approximately forty million acres of land of which but some 600,000 are irrigated. With the water now available, it has been estimated that an additional two to three million acres could be added. The French have conducted many surveys but none of their major projects has been brought to completion. The forests and timber areas which were destroyed during World War I have not been replaced while over-grazing by goats and camels and fuel lumber cutting have added to Syrian soil erosion.

During the war the Fighting French allocated fifty million francs—one million dollars at the official prevailing rate of exchange—to irrigation purposes, and plans were under active study until the French difficulties arose in Syria. The principal sources of water are the Litani, Orontes, Yarmuk, Khabour and Euphrates rivers. The entire question of Syrian irrigation as well as the related problems of transport, electrical power and industrial possibilities requires the preparation of specific plans. Some study has already been given to the utilization of the Euphrates by the Spears Mission, a British group which replaced the French Haut Commissaire after the fall of France, but much more investigation is needed before digging can start.

The irrigation problems of Iraq resemble those of Egypt and the Sudan. This country has a population of four and one-half million inhabitants who are living on 116,000 square miles of land. Its principal source of water lies in two large rivers, the Tigris and Euphrates. There is also an annual threat to the country from floods. The utilization of these rivers involves international co-operation since they have their headwaters in Turkey and outlets in other areas. Some of the soil is too saline and the over-silting of the canals complicates Iraq's water supply. The Allied armies made some efforts to arrest the flooding of the Euphrates and some good work on a local scale has been done by private landholders.

Iran has at present five major projects of water control under construction, involving a total of about 200,000 acres. Major projects under study are in the south and southwestern sections of the country. These plans have been financed by the government but have not been pushed as rapidly as might be desired in spite of able British advisors and superintendents and help from American irrigation specialists. Very large programs for the future are in the planning stage, but actual progress was delayed by war conditions and the Anglo-Soviet occupation.

Almost all of Saudi Arabia is arid and irrigation is one of the major problems confronting the country. At El Kharj a team of American water control experts has worked to utilize the sub-soil water table of the district in a large scale irrigation project which should reclaim much land.

Agricultural Research and Education

While land tenure and water control are two basic problems confronting the Middle East, other agricultural issues appear scarcely less important. These include the continued improvement of existing crops and animals, the introduction of new crops and improved animal strains, raising the skill of the fellah as an agriculturist, improvements in farming methods and in farm tools and equipment, and the development of storage, transport and marketing facilities. All of these call for a broad program of research and education. Some of the countries already have such programs; others do not, and unless aided by outside help probably will not be able to develop them rapidly in the near future.

Research stations and experimental farms have been established in Palestine, Iraq, Iran, Cyprus, Egypt and the Sudan, which produce worthwhile results. None of them, by American standards, is adequately equipped and staffed to face their thorny problems except those in Palestine. Some countries of the Middle East have common regional agricultural problems. Since the dissolution of the Middle East Supply Center and the agricultural conferences which it sponsored, there is at present no pooling of research facilities for the study of agricultural technology and no associations composed of the scientists engaged in this work.

Few of the research centers of the area have an agricultural economist so that the economic aspects of Middle East agriculture have been neglected. Little work has been done in the fields of co-operation, marketing, adaptability of crops to markets, agricultural finance, co-operative purchasing of farm equipment, grading of produce, selection of the most remunerative crops and utilization of land, or the diversification of crops to raise the nutritional standard of the fellahin.

Furthermore there is no machinery available in the Middle East for informing the farmers about the results of research, and research institutions do not have adequate means of getting their results into practice. In the United States, we have agricultural advisors and county agents. This extension service provides the means of disseminating research results by printed articles and reports, by actual demonstrations, and by the spoken word. With the exception of a few district agricultural officers in some of the countries and the close working relationships between the Jewish Settlements in Palestine and the Rehovot Experimental Station, no means exist in the Middle East for aiding farmers to apply the results of research.

The usual academic approach to education, directed towards the elimina-

tion of illiteracy, has a detrimental effect on the attitude of the Middle East farmers towards education. This type of education has further a segregative effect upon its recipients who are apt to leave the village after the schooling is over to become government employees or townsmen.

The best approach to this problem in the Middle East is one which takes the day to day problems of village life as both the goal and the means of education and which provides opportunities for participation in community problems. The village is the basic social institution for three-fourths of the people of the region.

Such an educational scheme might well direct its first efforts towards the improvement of hygiene, sanitation, first aid, disease prevention to reduce malaria and typhoid; the care of plants and animals; the proper use of soil and water; elementary technology such as the use and maintenance of pumps, tools and farm machinery; the arts of food preservation and storage; household and farm economies; the elements of community life, planning and self government. Since the children of this region mature very young, they could easily be included in such an educational plan.

This plan would first call for a preliminary program of teacher training. The teachers for Middle East rural districts should preferably have a rural background themselves. Academic qualifications are far less important than firsthand familiarity with rural life, qualities of leadership and prestige in the community. Such education is essential if Middle East agriculture is to be lifted above its present low standards.

The present Middle East systems of education comprise elementary schools, largely located in urban areas, secondary schools of the French lycée type and a few universities. In addition there are, principally in Syria and Egypt, some American, English and French colleges and secondary schools. The rural areas are very poorly served by elementary schools and illiteracy runs about 90 per cent. The few secondary schools are all located in cities and cater to but a very small fraction of the population. The universities and institutions of higher learning do not have modern curricula and many students go to Europe, England and America to complete their education.

Many of the Middle East countries are well aware of the place of education in a modern society and have recently taken steps to improve the situation. Palestine's school system is now quite modern and Egypt has increased the number of elementary schools. In their attempts to have the educational systems meet the problems of the area, some countries of the Middle East have already carried on experimental work with rural education. Egypt has established Rural Social Centers which aim to join rural education with hygiene, welfare work, and agricultural technology. Teachers for rural education are being trained in Cyprus, the Sudan, in Palestine for both Jews and Arabs and in Iraq.

Minerals, Metals and Industry

No great increase in agricultural output and standards of living can take place without a substantial improvement in industry and foreign trade to provide markets for surplus crops. Although the region is essentially agricultural and the development of its rural economy is basic, it offers good opportunities for industrial improvement. The mineral deposits in the Middle East have been the cause, in part, of the imperial aspirations of Western nations in the region.

The development of the Middle East oil resources is well under way and is already the subject of international agreements, the most recent of which was signed by England and America on September 24, 1945. This is only a preliminary step to the solution of the problem of the relative spheres of interest of England, the United States and the Soviet Union in the development not only of oil, but of the other mineral resources of this vast region.

Oil resources are especially rich in Iran, Iraq, Saudi Arabia, Kuwait (at the head of the Persian Gulf), and Bahrain. Deposits in Syria, Palestine and Afghanistan are also believed to be rich. Altogether, this is one of the world's largest remaining reserves of oil. Income from the exploitation of these resources will provide one of the main sources of funds for the future development of many of these countries.

In addition to petroleum, the area produces substantial quantities of cement, gold, silver, platinum, gypsum, phosphate rock, asbestos, and salt. Some minerals are now produced in exportable quantities. These are principally cupriferous pyrites, phosphate rock, salt and potash. The region imports some of its mineral requirements. Among these coal and coal products, petroleum products, nitrates, iron and steel, copper, lead, tin, zinc and aluminum, are of importance.

Gold mining in the Middle East is one of the oldest mining operations in the world. Today the mining of the metal is handicapped by lack of water supply, labor problems, outmoded methods and worn equipment and transportation difficulties. Gold deposits are found in the Sudan, Cyprus, Egypt, Eritrea, Ethiopia, Iran, Saudi Arabia, Syria and the Lebanon. The deposits of Cyprus, where modern methods of exploitation are used, are the most important. The region's output of gold is believed to be susceptible of some expansion.

Platinum occurs in Ethiopia in river placer deposits located in the Birbir Valley, the Talakle Province and the Tullo Dimter Highland. More prospecting and analysis will be required before commercial operations are possible.

The British colony of Cyprus is one of the largest copper producers in the British Empire. Copper bearing ores are said to occur also in the Sudan,

Egypt, Eritrea, Ethiopia, Iran and Syria. Cyprus, however, is the only commercial producer of importance and much of its copper export is in the form of pyrites and concentrates.

Cyprus is the principal producer of chromium ore in the region and is reported to have shipped 10,000 tons of metallurgical grade ore to the United States in 1943. Deposits of the ore are also reported in Egypt, Syria and the Lebanon.

Manganese occurs in a number of localities in the Middle East, but only in Egypt have the deposits proved of significance. During the period 1936-45 Egypt produced an average of 85,000 tons of this ore per year. This output may be expanded. Most of the ore is of low grade and is shipped crude. The deposits of manganese, which are held under lease by a British-owned firm, are said to be extensive.

Titanium ore (ilmenite) has been extracted in small quantities in Egypt since 1936 and this country possesses substantial deposits of the ore. It is now extracted by low cost surface methods and is concentrated before being shipped.

Unfortunately the Middle East is poor in coal deposits, relying almost exclusively on imports to meet its requirements. Iran is the only producer, although the output is small in relation to its large deposits. Modern coal mining installations and improved transportation would enable Iran to meet her increasing requirements and ship coal to other parts of the region.

Phosphate rock has long constituted one of the principal exports of the region. In 1938 Egypt was the seventh largest producer of phosphate in the world. The phosphate deposits of this country are large and susceptible of further development. Most of this commodity is shipped in the natural state to be manufactured into superphosphates by the importing nations. The manufacture of superphosphates by Egypt itself might constitute a logical extension of this industry, at least to meet nearby needs. Other deposits of phosphate rock have been reported in Palestine, Ethiopia, and Syria.

The saline waters of the Dead Sea, the "salinas" of Eritrea, the recently discovered deposits in Libya and Iran hold good prospects for the development of a Middle East potash and bromine industry. The area has long been an exporter of these commodities—most of the shipments originating in Palestine. Many of the countries already have plans, developed principally by British companies, for the exploitation of potash deposits.

Gypsum is produced largely by Egypt for its cement industry. Gypsum is also found in Cyprus, Iran, Iraq and Palestine, where problems of transport have prevented further development.

Salt is produced in every Middle East country and the area as a whole produces about 750,000 tons annually of which 600,000 tons are exported.

Aden and Egypt are the principal producers. In some countries the production of salt is a government monopoly; in others it is in private hands. It does not seem to hold promise for much further expansion.

Deposits of asbestos bearing rock are found in Cyprus, Iran and Ethiopia but only Cyprus has an important asbestos mining industry. It produces one-fifth of the world's supply. The asbestos produced there is of the short fiber variety and only five per cent of the weight of ore mined yields a marketable product.

The Middle East has a cement industry producing 700,000 tons annually which is largely locally consumed.

Other minerals or ores which have been mined in small quantities, or which are known to exist, are wolframite, nickel, tin, mica, and molybdenum, in Egypt; scattered deposits of low-grade iron ore in many countries; small deposits of lead and zinc in Egypt, Iran, Syria, and the Lebanon, and antimony in Iran. In addition a wide variety of other minerals is found, including mercury, silver, graphite, sulphur, alabaster, marble, semi-precious stones, and many clay and earth products such as ochre, kaolin, and fire-clay.

Besides mining, many other industries could be established or expanded. Among these the processing of agricultural commodities holds first place. In many respects the region is well adapted to the expansion of the textile and clothing industry since it produces much cotton and consumes large quantities of inexpensive clothing. Bettering the strains of wool-bearing flocks could improve the basis of the woolen textile industry and the present hand carpet industry. How far machinery could be introduced for weaving without destroying the unique character of hand-made oriental rugs and carpets, however, is questionable. The present small scale silk rug and textile industry is further capable of expansion.

There is also a Middle East seed oil industry producing a wide variety of products: cottonseed oil, sesame, palm and olive oils are all important commodities of the region's export trade. With improved oil seeds and modernized plants the seed oil and soap industry could be increased in importance.

The leather industry is another industry for which the region possesses natural qualifications. The present production of hides and leathers is of low quality. This is due, in part, to the type of animals produced, unskilled butchering and skinning, and primitive methods of curing and tanning. The improvement of this industry might also lead to the establishment of leather goods manufactures.

Egypt, Palestine, Syria and the Lebanon have all made important strides towards industrialization in recent years. The small machine, dental supplies, chemical, pharmaceuticals, cosmetic, glass, shoe and diamond polish-

ing industries recently established in Palestine are examples of what can be accomplished in the region with technology, trained artisans and relatively large amounts of foreign capital. Many of these new industries were developed during the war, while imports from other regions were largely cut off. How well they can maintain themselves in peace in competition with mass production from other countries, remains to be demonstrated.

Finance

Egypt and the Sudan, Palestine and Trans-Jordan, Iraq, Aden, Cyprus and British Somaliland are members of the Sterling Area. Although not regular members of the Sterling Area, Iran, Syria and the Lebanon, Ethiopia, Saudi Arabia and the former Italian colonies of Tripolitania, Cyrenaica, Eritrea and Italian Somaliland, tied their currencies to the pound and in varying degrees fall within the orbit of the Sterling Area.

During the war, shortages of goods developed in these countries due to shipping and procurement problems. At the same time, Allied military expenditures in the area served to increase the volume of money in circulation and the purchasing power of the inhabitants. As a result prices became inflated above the levels which prevailed when the rates of exchange were pegged. The inflation varied between the several countries, but in all of them it was severe. At the time of the Financial Conference held under the auspices of the Middle East Supply Center in the spring of 1944, prices had risen above prewar parities in Palestine to 337, Egypt 298, Syria 898, Iraq 614, Iran 493, and the Sudan 224. They were even higher in late 1946.

The rates of foreign exchange prevailing in late 1946 had not been adjusted to take care of this decline in the internal purchasing power of the local currencies, so that they undervalued the dollar and pound in comparison to most Middle East currencies. This has rendered difficult the export of many Middle East commodities.

Unless prices fall in the Middle East when goods become more plentiful or unless the rates of exchange with the dollar, pound and other currencies, are adjusted to allow for Middle East inflation, outside countries will find it difficult to import from the region, and the region, in turn, will lack dollars and pounds to pay for its imports.

The correction of the exchange rates would not, however, completely rid the Middle East of its financial problems. These will continue as long as the countries retain their membership in the Sterling Area System, which requires members to turn in all receipts of foreign currency to the Sterling Pool in London in exchange for sterling credits. Imports from non-sterling countries into Sterling Area Member countries are closely scrutinized and dollar exchange may be obtained only if the imports are regarded as essential or if the articles are not available from Britain herself or some

member of the System. Since the Anglo-American loan has been approved, however, the way is now cleared for a resumption of freer international trade in this region.

In spite of wartime restrictions, the Middle East improved its financial position substantially during the war. Egypt was able to repurchase a large proportion of its foreign held public debt and its government obligations are now largely domestically owned. This country, however, constituted a drain on the London dollar pool, drawing more dollars than it contributed to the extent of about 10.6 million dollars for the period 1940-1944.

Palestine contributed more to the dollar pool than she withdrew, her favorable balance from 1940-1944 amounting to about 44 million dollars. Iraq also held a favorable balance with this pool of approximately 12 million dollars as did Iran with net contributions of 51 million dollars. Syria and the Lebanon deposited a small amount with the London pool, \$666,000, during the period. On the whole the Middle East added to the Sterling Area pool about 97 million dollars from 1940-1944. In addition to these dollar pool credits, the countries of the Middle East accumulated large credits in London in the form of sterling balances. These credits arose from the heavy British military expenditures and procurement programs in the area. By January 1944, it was estimated that the total of these sterling credits amounted to \$1,750,000,000. Of this total, Egypt and the Sudan hold \$1,150,000; Palestine and Trans-Jordan \$350,000,000; Iraq \$250,000,000; and Aden \$4,000,000.

If, in the settlement of the Sterling Area Pool balances, some of the dollars and pounds earned by Palestine, Iraq, Iran, Syria and the Lebanon are made available, these countries will have substantial sums to aid in their developmental projects. These amounts, however, are insufficient to sustain any large program for the region and recourse must be had to other sources of funds.

Several such sources are now open, especially in view of the region's strong financial position. For one thing, the countries could follow their past practice of allowing foreign financed, owned and managed firms to develop their industries and trade. While this practice may be followed by some of the countries poor in capital and in enterprise, most of the countries desire to provide for home owned and, as far as possible, home managed industries. Only in this way can the region obtain complete freedom from foreign economic and political domination. If domestic capital is not available in sufficient amounts, capital might be obtained from international bodies such as the new International Bank, from national governmental agencies such as the United States Export-Import Bank, and from private banking institutions.

Transportation

The poor transportation system is another handicap under which the Middle East labors. It is not possible to plan for road developments, railroads, river and canal navigation and air transport without first or concomitantly establishing and developing industries. For these reasons, this topic will not be discussed here.

PRESENT PLANS FOR POST-WAR DEVELOPMENT

The Middle East is well aware of its economic possibilities and in recent years has taken steps to insure its economic advancement. The principal fields where developmental programs are now under way are irrigation, water control, soil erosion and improvement, reforestation, improvement in agricultural techniques, development of mineral resources and post-war industrial development. Palestine has rapidly taken the lead in these fields under the impact of the Jewish immigration of the 'thirties. Considerable progress has already been made by Egypt, the Sudan, Syria and the Lebanon, Cyprus, Iran and Iraq.

The developments in water control, soil erosion and reforestation have been briefly indicated in previous paragraphs. The problem of the improvement of agricultural techniques is receiving the active attention of the Ministries of Agriculture of the area. The techniques of dry farming, introduction of new crops and animal strains, are all under active study while experiments in orchard crops are being carried on. Soil analyses, studies of the reclamation possibilities of sandy soils and waste lands are other subjects which the agricultural technicians of the area are examining. The region is also developing projects for the resettlement of nomadic tribes and the movement of rural inhabitants from sub-marginal to reclaimed land.

Egypt, Palestine, Syria and the Lebanon, Iran and Iraq have developed post-war industrialization plans to handle in part the unemployment which arose from the withdrawal of Allied troops from the area and the demobilization of the local war industries. The most ambitious of these is Egypt's five-year plan involving a total expenditure of approximately \$460,000,000 and including schemes for irrigation, public health, railroads, roads, bridges, agricultural reform, public utilities, education, ports, industrial and commercial development. Egypt is aware of the rural social problems and has included social centers for her village communities in her developmental plans. Syria and the Lebanon are devoting attention to the development of agricultural resources by irrigation, the improvement of crops and livestock and are engaging the services of foreign agricultural experts to assist in the work.

Iran's projects include the construction of model villages, low cost hous-

ing, draining of marshes, establishment of agricultural credit banks, reduction of taxes on land and cattle, development of mineral resources, construction of canals and roads and a system of state supervision of industry to facilitate the economic development of the country.

The plans developed by Iraq are the most ambitious, although Palestine and Egypt have had more success in the actual application of projects. These plans were first formulated by Iraq in the Essential Works Act of 1931 which provided a five year program. In 1936 a new five year plan was prepared calling for a total expenditure of \$15,000,000 which is still being carried out. In addition to the five year plan, a special program of state railway development has been drawn up requiring the expenditure of \$17,000,000 and \$2,200,000 has been set aside for a program of public works.

Iraq's program is characteristic of the planning now taking place in other countries of the area. These projects can be carried forward much more rapidly if assistance is provided from the outside.

The United States Export-Import Bank has granted credits for developmental projects to Saudi Arabia, \$25,000,000; Turkey, \$28,000,000; Ethiopia, \$4,000,000. Substantial credits for the purchase of surplus property have been extended to Turkey, \$10,000,000; the Lebanon, \$5,000,000; Iran, \$2,800,000; Saudi Arabia, \$2,000,000; and Ethiopia, \$1,000,000.

NEED FOR INTERNATIONAL ASSISTANCE

From all present indications it is likely that outside help, both technical and financial, will be furnished by the subsidiary organizations of the United Nations such as the Food and Agriculture Organization, possibly through a regional office established especially to work with the countries of this region. This type of international co-operation is well adapted to the problems of the region as the experience of an earlier international organization, the Middle East Supply Center, during the war years, shows.

In the spring of 1941 the advance of the Axis forces had disrupted the Middle East's usual channels of imported supplies. Many Middle East countries suffered crop failures from drought, floods, winds and insect pests. These material woes were accompanied by fears arising from the Axis victories in Greece and North Africa. The developing unrest held potential dangers to Allied military operations. The British army undertook to organize the flow of goods to the region but found itself ill-prepared and far too busy with military operations.

British authorities in London then decided to organize a civilian agency to guarantee the flow of essential supplies to the area. Thus the Middle East Supply Center was established in April 1941, under the British Ministry of War Transport, and later the Minister of State resident in Cairo. With the growing American interests in the region, the U.S. became a partner in the spring of 1942.

The work of the Middle East Supply Center was first directed to the problems of supply for the area, including requirements of the several countries, import licenses, procurement of imports, distribution of supplies, and the accumulation of essential stockpiles for the area itself and for the Allies. To save valuable shipping space and critically short supplies, the Middle East Supply Center was active in assisting the development of local production and the increase in trade between the countries of the region. Imports were limited to goods essential for the region.

The Center was staffed by experts from both England and the United States, who studied needs, furnished technical advice, and assisted countries in problems of production, trade and finance.

The Center went out of existence on November 1, 1945, after the need for its regulatory functions had disappeared. Leading officials of the Middle East countries and the press have expressed the hope that the Middle East Supply Center, stripped of its regulatory functions, could be continued after the war, with representation from the countries of the region to assist in its post-war developmental plans.

Since the dissolution of the Middle East Supply Center, the Arab League has been making plans for inter-regional co-operation looking towards a unified customs' system, the pooling of economic and statistical information, joint industrial exhibits, uniform weights and measures and regional transportation development, particularly aviation. These plans, however, are still in the blueprint stage. Unfortunately, the most successful part of this Arab League planning is the boycott of Jewish goods from Palestine, a scheme which will prove of economic value to no one.

The Middle East Supply Center was succeeded by a British institution, the British Supply Mission, which acted as an intermediary for the local governments with international groups for the allocation of scarce materials. Except for the continuation of the locust control program, but little of the developmental work of the Middle East Supply Center was continued. The direct control over imports was abandoned. Import control has been replaced by the Sterling Area "hard currency" agreements, which allocate scarce currencies for imports into the area. The most important of these, signed April 1, 1946, allocated \$40,000,000 to Egypt and \$12,000,000 to Iraq from the London dollar pool to provide for essential imports from the United States.

Based upon the example of the Center, a new organization might be established and named "The Middle East Regional Economic Commission." Such an organization could be set as a subsidiary of the Economic and Social Council of the United Nations. Appropriate members of the United Nations and the countries of the Middle East itself should be represented on the Commission. Unless these Middle Eastern States have a definite, if not the dominant, voice in the organization and operation of

the Commission, it will not have the confidence of the area and will not be able to operate effectively. Further, it should be organized to deal effectively and impartially with all the countries of the region, both Arab and non-Arab, Moslem and non-Moslem.

The Middle East Economic Commission should not be an operating agency and should have no powers of compulsion of any type. Its functions should be limited to supplying technical advice and assistance to the countries of the area. The Commission should not itself buy or sell, lend money, engage employees or enter into any contract on behalf of any country. Each member country would contract for itself and assume full responsibility for any arrangements made.

It would, upon the request of any Middle East member country, conduct surveys, make explorations, prepare or review plans for development, and suggest new industrial, agricultural and commercial projects in co-operation with appropriate specialized world international organizations, such as the Food and Agriculture Organization of the United Nations.

It could then aid the member countries to obtain financial assistance from the International Bank or other governmental or private lending agencies, and furnish assistance in procuring supplies and technical experts. It could perform a valuable service in helping to arrange for fellowships for well-qualified Middle East students in engineering, agriculture, commerce and the sciences and thus aid the area to utilize its own personnel in its development.

The Middle East Supply Center, before its liquidation on November 1, 1945, had already done much work in the fields discussed in the preceding paragraphs. It accumulated large files of memoranda, studies and reports on agriculture, industry, trade, distribution and finance. It had a competent staff which gained experience in Middle East economic affairs and became expert in dealing with Middle East officials and inhabitants. This wealth of information and experience could be utilized by the proposed Middle East Economic Commission.

If the world is to attain the highest levels of prosperity which its present technology can sustain, it will be necessary to cultivate our economies not only intensively as is now being done by the Western world and Russia but to work on the extensive margin in less developed lands. The Middle East constitutes, in spite of its antiquity, one of our new economic frontiers. Its four and one-half million square miles of territory, its seventy-two million inhabitants, its land and resources should permit the region to sustain an economy far larger than it now does.

It might be objected that the population of the Middle East is lacking in energy, that it is church ridden and bound hand and foot in traditions looking to the past and the maintenance of the status quo. Much of this traditional attitude is due to the fear of change by the groups which domi-

nate the countries and profit by the present feudal organization and institutions. Much of the local opposition to Jewish immigration to Palestine is supported by such groups. If it can be demonstrated to these groups that economic improvement will benefit all, that it will not destroy but increase wealth, the attitudes toward it should change. If the workers, rural and urban, can be provided with adequate food and technical guidance, they will acquire new energies, especially when these energies yield large material and spiritual rewards.

The rapid economic progress which Palestine has made during the war and the years immediately preceding it show what can be accomplished in the Middle East with financial assistance from the outside. During the years 1936-1945, a total of \$400,000,000 of Jewish capital has been invested in various Palestinian developmental projects, largely through the Jewish National Fund.

These funds have been invested in a wide variety of projects including soil reclamation, reforestation, water development, urban improvements, road construction, agricultural research centers, harbors and dock facilities, air transport and in a wide variety of industries including citrus fruit juice canning, dental equipment, diamond grinding and polishing, small tools manufacture, light machine industries, cement and chemical products. They helped to provide useful employment for the immigrants who came to Palestine during the 'thirties and were partly responsible for the steady improvement in conditions over the period for the citizens of Palestine, both Arabs and Jews.

As a result of these developments, the statistics for unemployment in October 1945, showed but 900 unemployed persons including those temporarily out of work because of disability. Such progress is indicative of what can be done in all Middle East countries if the necessary technical and financial assistance is provided.

If the countries of the Middle East are to be something more than colonial pawns in the struggle for empire, if we are not to witness here an international struggle for economic and political domination, the only alternative is international co-operation. Establishment of a regional planning agency such as the proposed Middle East Economic Commission appears to offer a feasible approach to the question. Furthermore the development of the region would greatly contribute to world prosperity, remove a potentially explosive area from the international scene and contribute to the maintenance of a durable peace.

ASIA

CHAPTER XIV

INDIA'S ECONOMIC DEVELOPMENT

by GORDON GRIFFITHS

I. EFFECT OF THE WAR ON THE INDIAN ECONOMY

A few months after Pearl Harbor it looked as if the Japanese might invade India. India was a great potential base for the counteroffensive against Japan. It possessed the most extensive network of railways in Asia and, untouched by invasion, an industry far more developed than China's. Strategically, eastern India was the jumping-off point for the re-opening of the Burma supply route to China, the site of three-quarters of India's war production, including the greatest steel plant in the British Empire (The Tata Iron and Steel Co.), and the source of many of the strategic war materials essential to the United Nations' war effort.

Although an American technical mission in 1942 recommended the importation of equipment from abroad and measures for more effective mobilization of Indian resources, little was done along these lines. The failure of the Cripps Mission in March 1942, the arrest of the Congress leaders in August, and the ensuing civil disobedience did not facilitate economic mobilization of the country. The supply situation in the United States and the acute shipping shortage made it difficult to obtain equipment which might have been easy to find a year or two earlier. Instead of achieving higher levels after 1942, Indian industrial production as a whole actually never equaled the peak reached in the summer of 1941, although finished steel capacity increased from a prewar 750,000 to approximately 1,250,000 tons in 1943-44 (as compared with U.S. production of 52,798,000 tons in 1939), and impressive records were set in the output of finished munitions items. But all this was at the expense of consumers' goods production.¹

¹ Many Indians believed that traditional English imperialist ideas blocked the efforts to industrialize India for war. Thus Leland Stowe, after watching on the spot the collapse and easy conquest of Indo-China, Burma, and Singapore, and the near collapse of India, reported:

"... The critical lack of airplane factories in India—a lack which . . . threatened the Allied cause with the loss of both India and China—existed because of London's policy. British big business and finance had almost contrived to cut the jugular veins of the British Empire. It was enlightening on March 25 to find such a time-serving voice of imperialism as the *Calcutta Statesman* suddenly calling spades by their right name in unfamiliar and unprecedented outspokenness.

"'The future is indeed all-important,' said the *Statesman*. 'But what is of evil omen is the deter-

War Finance and Inflation

Tightening of the belt, which was possible in England or the United States where the government possessed general support and where price controls were comparatively effective, could only produce inflation in India where these conditions did not obtain and where there was no slack to take in the belt. Inflation developed also as a result of heavy British expenditures in India—which were in fact heavier than those of the Government of India itself. These were at first paid for by the retirement of India's governmental debt to Britain and by liquidation of a substantial part of British private investments in India, but these resources proved inadequate. The remainder has been paid for by the accumulation of a British debt to India, amounting, by the close of 1944, to an estimated 4 billions.² India has gone without goods in payment (until in 1944 a program of importing consumers' goods, mainly from Britain, was inaugurated). Prices meanwhile rose to three to four times prewar levels—where goods were obtainable at all. Food prices were worst affected, with textiles next. While inflation was worse in China and the Middle East, and price controls in 1944 at last succeeded in bringing Indian inflation under control, few countries which were not directly invaded paid as heavy a price for World War II.

Famine and the Position of Agriculture

Against this background there developed the great Bengal famine in 1943, in which two million people are estimated to have died from famine directly, and an additional large number from the ensuing epidemics. War conditions upset the delicate equilibrium in Indian agriculture, which labors under the pressure of over-population on the land. The rate of increase of population—5 million per year in a population of 400 million—

mination of the men who have failed to retain power in their incompetent hands. They resisted from the outset all suggestions that the air arm should be developed on a large scale, that aircraft industries should be established, that new heavy industries should be created, and that power should be transferred from London to India; that a national government which should be a working model of a future federal government should be set up, and that the Indians should be rallied to the defense of their own country and armed for that defense. In September, 1939, the Defense Secretary of the Council of State (India's) refused a plane production proposal because it would mean "an industrial revolution of the kind the world has never seen."

"Not until June, 1940," continued the *Statesman*, "was there the beginning of a move to consider the possibility of assembling aircraft in India. . . . We need indeed a political settlement. But above everything else we need a governmental machine more suited to waging the war—a clean sweep of the present bureaucratic methods."

"That was a British judgment from a British editor most intimately informed about India. . . . Prominent Indians more than confirmed the statements in the *Calcutta Statesman*. One of them told me: 'During all these years the British government has deliberately prevented us from building up our industries (even) for defense purposes. . . . Their policy was not to start industries which would lead to competition between British and Indian industry after the war.'"

From Leland Stowe, *They Shall not Sleep* (New York: Alfred A. Knopf, Inc., 1944). Copyright 1944 by Alfred A. Knopf, Inc. Reprinted by permission. (Editor's note.)

² British purchases in India were at controlled, not inflated prices. This is demonstrated by the Fourth Report from the Select Committee on National Expenditure: "British Expenditure in India," which refutes the contentions of some British newspapers.

is not greater than that experienced by England and other European countries in the nineteenth century, but in India industrialization has not kept pace with the breakdown in the traditional village crafts, and the land is called upon to support an increasing population on an inefficient system of smaller and smaller farms. The percentage of the population dependent upon industry actually declined from 11.2 per cent in 1911 to 10.36 per cent in 1931, while the proportion of the total population engaged in agriculture increased from 61 per cent in 1891 to 71 per cent in 1911 and to 73 per cent in 1941. These shifts were in the opposite direction from those in advancing countries. Eighty per cent of peasant holdings are under ten acres; sixty per cent are under five acres. The rural debt has increased greatly since the last war, and the number of holdings has nearly doubled.

Bengal peasants have been tenant-farmers since 1793, when the "Permanent Settlement" transformed them from free peasants owning their own land and paying a tax to the government tax collector or *zamindar*. The Permanent Settlement attempted to create out of the *zamindar* a landlord, in the image of the eighteenth century English gentleman-farmer. Thus was established a class attached by its origin to the British government, but which, unlike its English model, took little interest in improving the land. Its tax obligation to the government has remained fixed according to the terms of the Permanent Settlement, while that of the peasant—transformed from tax into rent—has been allowed to rise, although its further increase has now been checked. The peasant became the victim of the absentee landlord and of the usurious money-lender.

India produces an annual rice crop in the neighborhood of 25 million tons. The additional rice usually imported from Burma represents a significant fraction of the rice on the market, and is particularly important for the coastal towns. The loss of Burma's rice in 1943 was felt much more seriously than might have been expected. The worst sufferers from the famine were the poor peasants and agricultural laborers, who poured into the cities, like Calcutta, in the hope of relief. As in the time of the Black Death in England, the landlords chose this occasion to begin paying for labor in money instead of in kind, so that the poor peasant and agricultural laborer starved as food prices rose. The peasants with the smaller plots were forced to give up what they had and in large numbers they joined the ranks of the propertyless.

The Government of Bengal was in the hands of the party which represented the landlords. It had the support also of the European party, representative of the British commercial community in Calcutta. Much of the blame for the famine, on the part of official British spokesmen, was laid at the door of this government of landlords, who had been brought into existence originally by British policy. Only partisan distortion could lay the major blame for a disaster of this magnitude at the door of a miserable

provincial government. If politics had not occupied a higher place than humanity in its counsels, and if the people had had a more direct contact with their government, the central Government at New Delhi would have assumed emergency responsibility for what was after all a national problem. That such vigor was possible was shown when the new Viceroy later sent the army to administer relief in the Calcutta area.

Other factors also played a part in the famine, especially the inability of the railroads, suffering as they did from both inefficiency and shortage of equipment, to carry sufficient quantities of grain in addition to their greatly increased war loads. The flood which washed out an important section of the track feeding Calcutta added to the difficulty of meeting the situation. But the essential fact remains that the loss of several million lives was caused, not by any significant absolute shortage of food, but by the inability of an inefficient and partly corrupt government to prevent landlords and speculators from taking advantage of inflationary conditions to hoard the means of life.

Again in the winter of 1945-46, crop failures have caused famines to threaten India, along with many other areas. While the central government is seeking food imports vigorously the world shortage of grains makes the current outlook again dark for millions of Indians.

The Balance Sheet

Food, coal, and railroad transport are closely interrelated. A sharp drop in coal production in 1944 was due to the loss of labor. Labor left the mines because of the food shortage, the prospect of better wages in neighboring war industries, or to devote more time to the seasonal occupation of farming. The government-owned railroads, the biggest consumers of coal, exerted pressure against adequate increases in coalminers' wages to cover the rise in the cost of living, on the ground that they might not be able to bear the increased cost of coal after the war.

In 1942 and 1943 predictions were frequent that the entire Indian economy was near collapse. The balance sheet for the war would show that the increases in plant capacity, in the production of finished war goods and in raw materials, were paid for—under the prevailing structure of the Indian economy—at a staggeringly “uneconomic” cost.

Indian Industry at the End of the War

Coal and Iron. Bengal and Bombay, which contain respectively 15 and 5 per cent of the population, accounted in 1939 for 29 and 23 per cent of the total number of industrial workers in the country. The war accentuated this concentration.

At present, a large fraction of India's industrial production is located in Calcutta and the surrounding area.

One hundred miles west of Calcutta is Jamshedpur, the site of the Tata Iron and Steel Company, the largest single steel plant in the British Empire. It was located there prior to the first World War, because of the proximity of coal fields and iron mines. India is second only to the United States and France in the extent of her iron ore deposits, and leads the world in high-grade iron ores. Of the latter, 3,600 million tons of superior ore are said to be available, and they are located close to the coal fields. The coal resources, while extensive, are deficient in coal of coking quality. Bengal and Bihar account for 90 per cent of India's coal production. India's total coal resources are estimated at between 50,000 and 60,000 million tons.

India's second largest steel plant, the Steel Corporation of Bengal, came into operation in 1939. Together with Tata—which is Indian-owned and managed—this British concern accounts for 90 per cent of India's steel production. Some high quality special steels are produced by a third concern in southern India, in the State of Mysore.

Engineering. It is natural that the bulk of India's engineering should be located also in the Calcutta area. Even under the pressure of war, it has remained in the jobbing stage. The railway workshops had to carry a substantial burden of orders which would have been placed with a more firmly established industry in other countries. Nevertheless, India in the course of the war, succeeded in producing the simpler types of machine tools.

The impressive quantity of machine tools imported from England and America will constitute a permanent basis for further industrial development, even though most of them went into ordnance factories.

Chemicals. During the war India vastly increased its capacity to produce pharmaceuticals, and laid the foundations for a heavy chemical industry. More than fifty new plants, mostly in Bengal, came into operation. Just before the war, Tata Chemicals began to erect a great series of plants in an isolated tip of land on the west coast, north of Bombay, and the development of this project will attract much interest. The linking of Tata's interests with the Imperial Chemical Industries, reported at the end of 1945, is a development of considerable economic and political significance. Another will be the success of the sulphuric acid plants which, by the close of the war, were finally approved for export from America.

The production of ammonium sulphate fertilizer has engaged a great deal of public discussion in India. In 1944, a technical mission composed of representatives of Imperial Chemical Industries reported to the Government of India its recommendation that a plant be erected for the annual production of 350,000 tons. The Government plans to build this at Sindri.

Petroleum and Power Alcohol. India has only two fairly small petroleum fields. They lie at opposite ends of the country: in the extreme northeast, in Assam, and in the northwest frontier. Most of India's oil has been im-

ported during the war from the Persian Gulf. There has accordingly been much attention given to the possibilities of power alcohol, which can be produced from the waste products of the sugar refineries. Since 1929, India has been the world's leading producer of cane sugar. Two power alcohol plants were approved for export from America in 1945, after years of discussion.

Textiles. As the Calcutta area is the center of steel, coal and engineering, Bombay in the west is the center of the textile industry. The bulk of industry, including ordnance, in the Calcutta area is in British hands, whereas Bombay is the capital of Indian-owned industry. Even here it is difficult to estimate the degree of indirect British influence by control over floating of investment shares through that institution peculiar to India, the "managing agency." The textile industry did not expand its plant during the war like the engineering industry, but instead has exhausted old plant in the process of filling war orders and finding new markets in Africa and the Middle East. The Government's scheme to produce "standard cloth" for the masses of the Indian population was not popular with the manufacturers, and clothing shortage during the war has been second only to the shortages of food and coal.

Natural Resources. Indian industrialization will suffer from lack of lead, zinc, and tin, inadequate copper and sulphur, and shortage of coking coal. On the other hand, it is one of the world's leading producers of manganese (from the Central Provinces), of beryllium, steatite (talc), and many other minerals. Its mica industry represents three-quarters of the world's supply, and on it the radio industry of the United Nations depended for victory. Bauxite and chrome exist in adequate quantities. Other monopolies are shellace and jute (Bengal), while after the United States India is the biggest producer of raw cotton. She possesses abundant wool, and leads the world in tobacco and hides. In sum, while India possesses most of the resources for industrialization, and heavy industry has made its appearance, the economy is still dominated by the extractive industries characteristic of the colonial period.

Transport. India as yet produces no internal combustion engines, though repair and assembly plants for both automobiles and aircraft have been established. Small shipyards appeared during the war, but the country possesses only one relatively small shipping line with Indian management. India will soon produce its first locomotives.

Railroads. Britain's greatest contribution to India's development has been the extensive railway network (41,000 miles in 1939), although its service to commerce is reduced by the confusion of three gauges and by the emphasis—which anyone can observe from a glance at the map—upon the strategic requirements of the northwest frontier.

Roads. The vested interests in the railways are commonly blamed for

having discouraged the building of roads. The railroads before the war carried more than 98 per cent of freight. The Government plans to expand the railroads in the post-war years by 500 miles per year, but its great ambition is to create a network of roads—400,000 miles—extending communication to every village. Wartime military needs have given impetus to this development.

Power. As for power, India stands midway in the list of the world's countries in respect of potential water power, and at the bottom with respect to exploitation of these resources, although much work has already been done by the British in irrigation and reclamation. The Damodar Valley scheme, which is described as a TVA for Bengal and Bihar, is now being undertaken. In the coal region, the production of power from burning coal will be cheaper than water power, as well as a more efficient method of using coal.

II. PLANS FOR AGRICULTURAL DEVELOPMENT

"India . . . is only half the size of the United States . . . yet it has a population of 400,000,000, and fearful though the thought may be, by the year 1960 we expect that population to reach the somewhat high figure of 500,000,000.

"Now, here is a problem in human statistics which nobody can describe as of 'small dimensions.' And what, exactly, is the position as regards the production and the supplying of food for these teeming millions? We have, roughly, 600,000,000 acres of land in India, of which a little over 200,000,000 are cultivated, and another 170,000,000 are supposed to be cultivatable. But the stark fact today is that of the 400,000,000 people about 30 per cent do not get enough to eat. That means, roughly, 100,000,000 of the population. And the other fact, no less harsh and significant, is that the annual income per capita is in the neighborhood of \$22. So you will readily understand, there is not enough food and there is not enough purchasing power."

So spoke Sir Girja Bajpai in outlining the problem of India at the Quebec Food and Agriculture Conference in October 1945. To meet this problem, he stated further, "We have come to the conclusion that the State must primarily, and without equivocation or mental reservation, itself assume responsibility for the provision of food for its people."

In January 1946, the Government of India announced a new food policy, based on extensive planning by the Imperial Council of Agricultural Research and the Famine Inquiry Commission, which flatly assumed this responsibility. The policy "includes the responsibility (of the government) for providing enough food for all, sufficient in quantity and of requisite quality," and of giving high priority to measures to increase the food resources of the country, remove the threat of famine, raise levels of consumption, increase the prosperity of cultivators, and create a healthy and vigorous population.

The program sets for its goal raising Indian output from 10 per cent for grains and 20 per cent for beans, up to doubling vegetable production and quadrupling that of milk and meat, fish and eggs. The program of action includes soil and water conservation, greater production and use of fertilizer and manures, distribution of improved seeds, protection of crops and stored grain against pests and diseases, malaria control, increase of fisheries and milk production, establishment of demonstration and distribution centers, and training practical workers and administrators. Supporting specific measures include providing iron and steel for farm implements and mechanization of cultivation where suitable; experiments in village organization, including co-operative and collective farming; conservation of forest resources and development of village forests; improvement of marketing facilities; expansion of child feeding programs, school meals, and industrial canteens; enlargement of agricultural co-operation and credit facilities; and price regulation to insure adequate returns to producers and fair prices to consumers. Encouragement of village industries and of food processing industries are also included. Programs of action are to be completed within 1946, including arrangements for training staffs and providing materials, and for co-ordinating local programs into a unified national program. Long-term programs are encouraged, as well as immediate short-term ones. The Central Government will co-operate with Provinces through grants of funds, provision of facilities for training and research, and expert advice. The Central Government will also make central plans for the required increases in output, fit Provincial programs into these plans, and then determine, in consultation, what additional amounts are required in each area and the measures needed to produce them.

The program also provides for encouraging the increase of size of holdings and for consultation with Provinces on measures to improve existing systems of land tenure, where needed. Indian agricultural economists, however, believe that far more vigorous steps to deal with the antiquated and feudalistic system of land tenure are essential to agricultural progress. They say that the Indian tenure system is as primitive as Europe's was eighty years ago. Two-thirds of the farms are operated on a crop-share basis, with the landlord receiving half the crop, but contributing nothing to production and performing no economic functions. The actual producers of wealth are left underfed, physically unfit, and intellectually backward. To date, public efforts to regulate tenancy have only held the *status quo*, and nothing more.

Despite this shortcoming, the newly-announced food program is a bold step toward dealing with India's chronic problems of deficient food and recurring famines. It remains to be seen how effectively the Interim Government, or its successor, continues the program or carries it into action.

III. THE BOMBAY "PLAN OF ECONOMIC DEVELOPMENT FOR INDIA"

Increase in Standard of Living

It was in the setting of the Bengal famine that India's most prominent industrialists³ published in January 1944, "A Plan of Economic Development for India." Known as the "Bombay Plan," it calls for the trebling of the present national income within a fifteen-year period,⁴ at an estimated cost of \$30 billion. The authors use as their starting point certain defined minimum standards of diet, clothing, housing, health and education. They explain that their goal is actually more modest than the fivefold increase (from 25 to 125 billion roubles) achieved by the U.S.S.R. in the twelve-year period since the opening of the first Five Year Plan, in view of the fact that Indian resources are not as extensive and that they do not wish to propose the sacrifice paid by the U.S.S.R. Industrial production, at the end of the fifteen-year period, would be 500 per cent of 1931-32, agricultural production 130 per cent, and services 200 per cent.

Shifting from Agriculture to Industry

The goal would be achieved by a better balancing of the economy, as well as by increased production. The part of the national income to be derived from industry would increase from 17 per cent to 35 per cent as shown in the following table, while that of agriculture would decrease from 53 per cent to 40 per cent, though of course both would increase in absolute amount.

"BALANCING THE ECONOMY"

	1931-32		At end of fifteen year plan	
	Net income in millions of dollars	%	Net income in millions of dollars	%
Industry	1,122	17	6,720	35
Agriculture	3,498	53	8,010	40
Services	1,452	22	4,350	20

(Rupees converted to dollars here and throughout at \$.30.)

The Plan estimated the occupational redistribution which would result as shown on the next page.

The number engaged in non-agricultural occupations would increase as a result of the fifteen-year Plan from 41.3 in 1931 to 92.6 million, or from 28

³ These were Sir Purshotamdas Thakurdas, J. R. D. Tata, G. D. Birla, Sir Ardeshir Dalal, Sir Shri Ram, Kasturbhai Lalbhai, A. D. Schroff, and John Matthai. The major Indian-owned industries are represented, particularly the steel (Tata) and textiles (Birla).

⁴ In view of the anticipated population increases, the *per capita* national income at the end of the fifteen-year period would be only double the present.

OCCUPATIONAL DISTRIBUTION IN 1931 AND 1962^a

	1931		1962	
	millions	%	millions	%
Agriculture	106.3	72	129.7	58
Industry	22.1	15	57.9	26
Services ^b	19.2	13	34.7	16
Total working population	147.6	100	222.3	100
Total population	338.1		494.0	

per cent to 42 per cent of the total working population. However, caution must be observed in interpreting the figures used for employment in "industry." The number in plants employing 50 or more workers was in 1931 in the neighborhood of 2 million, so that the figure 22 must include cottage industry. Indeed the investment program envisaged in the Plan "is calculated on the basis of a capital equipment of \$450 per worker" (as compared with \$5,000 in the U.S. in manufacturing and transport), and "this ratio of capital equipment per worker seems reasonable if allowance is made for the fact that small scale industries would have an important scope in the economic development of the country."

Distribution of Investment

The capital requirements of the Plan are estimated as follows:

	Millions of dollars
Industry	13,440
Agriculture	3,720
Communications	2,820
Education	1,470
Health	1,350
Housing	6,600
Miscellaneous	600
Total	30,000

Of this thirty billions, nine-tenths would be for non-recurring investment. Basic industries would receive priority in the earlier years, and would include power, mining, engineering (machine tools), chemicals, armaments, transport (manufacture of railroad equipment, ship-building, automobile and aircraft production) and cement.

Sources of Capital

The expected sources of capital were listed as shown on page 277.

^a The 1931 census is used because results of the 1941 census were not yet available. A population increase of 5 million per year is assumed.

^b "This category includes trade, transport, government, administration, professions and domestic service. Persons living on their own income or engaged in unproductive occupations, whose number was 1,800,000 in 1931, are also added to this category for the sake of convenience."

	Millions of dollars	
		<i>"External finance"</i>
Hoarded wealth	900	
Sterling securities	3,000	
Balance of trade	1,800	
Foreign borrowing	2,100	
	<hr/> 7,800	
		<i>"Internal finance"</i>
Savings	12,000	
"Created money"	10,200	
	<hr/> 22,200	
		<u>Total 30,000</u>

It will be noticed that the authors hoped to be dependent for only a small fraction of the total cost on "foreign borrowing," but this hope rested on the expectation that Britain would be able to make good India's sterling assets, and that ten billion would be created by the expansion of internal circulating medium.

Criticisms of the Bombay Plan

Criticism of the Plan centered particularly around the proposal to pay for more than a third of it by "created money." It is said by its critics that the Indian people have suffered more than sufficiently from inflation during the war. Proponents of the Plan pointed out that the "created money" would be balanced by an increase in the production of goods, which was not the case during the war.

Early critics of the Plan felt that it did not offer sufficient guarantees for the equitable distribution of the trebled national income. Attack centered on the absence of provision for a minimum wage. When the authors published Part II of the Plan, they stated frankly that "a basic minimum wage for all occupations cannot be considered at this stage," but they proposed to make a beginning in certain well established industries such as cotton textile, sugar, cement, engineering, jute and mining. "In the initial stages, the minimum below which wages should not be allowed to fall should be related to the normal wage level prevailing in each industry. The minimum should be revised from time to time till it corresponds with a reasonable standard of living."

While the proposals regarding the minimum wage left something to be desired, the authors placed their main reliance for the attainment of the goal to raise the standard of living upon other measures. First of all was the prospect of full employment. Secondly, it was pointed out that the cost of living would be reduced by the provision of various social services. ". . . primary, middle school and adult education and medical treatment . . . should be provided free of charge." The State would subsidize low-cost

public utilities for mass consumption. Social Insurance was postponed pending achievement of full and stable employment, but a beginning was proposed in the form of sickness insurance and holidays with pay for workers in organized industries.

A third general criticism of the Plan was that it did not envisage sufficiently radical agrarian reform. Until the Indian peasant came to own, free of debt, the land he tilled, there was no prospect of raising the standard of living, no meaning to "full employment," and no basis for extensive social services. Furthermore, if highly developed industry were to be grafted upon feudal agrarian society, as in Prussia and Japan, the political results were likely to be similar. The original Plan proposed "co-operative farming" as a means of increasing "the size of the holding for purposes of cultivation without depriving the cultivators of their right to the ownership of their existing holdings." When the second part of the Plan was published at the end of 1944, it included, partly no doubt in response to public criticism, more specific recommendations for agrarian reform. It acknowledged "the establishment of a class of peasant proprietors" as the goal, and proposed the gradual abolition of the absentee landlord system (the "gradual application" throughout India of the Floud Commission's recommendation to replace the *zamindari* system in Bengal by the *ryotwari* system). With these proposals for reforms in land tenure went programs for irrigation, prevention of soil erosion, afforestation, and fixing by the State of fair prices for agricultural products.

IV. INTERNATIONAL IMPLICATIONS OF INDIA'S ECONOMIC DEVELOPMENT

American Interest in India's Development

The achievement of even a modest fraction of the goal set by the Bombay Plan, by raising the purchasing power of 400 million people, would have a profound effect upon international trade. This, as well as the potential market for American exports—especially capital goods—constitutes its principal interest to Americans. In the past American economic ties with India have been slight. American investment has been negligible, consisting for the most part in distributing or assembly units of American automotive and petroleum companies. American exports to India averaged only \$40 million a year during the years 1936-40, while U.S.A. exports to all countries were running at the \$3 billion mark. India thus took barely over 1 per cent of our exports. India, before the war, imported only 6 per cent of her goods from the U.S.A., and exported about the same percentage of her exports to the U.S.A.

India's place in American trade has been radically changed during the war. United States exports to India amounted in 1944 to about 6 per cent of the total to all countries, even including the Lend-Lease shipments to

Britain and Russia and the vast trade with Canada. Nearly half of these exports to India consisted of items classed by the Department of Commerce as "military," but the remainder, some \$400 millions, represented a tenfold increase in value over prewar values. Allowing for a price increase of around 30 per cent, this still represented perhaps eight times the prewar volume. This expansion would not have been possible except under Lend-Lease, which accounted for 90 per cent, but the 10 per cent fraction left over for cash procurement was as large as the average total recorded for the years 1936-40. Some of the cash-purchase, and of course all of the Lend-Lease, was for war-essential uses. A decline from the 1944 level of India's imports from the United States is inevitable unless the requirements of India's envisaged economic development come to take the place of the wartime requirements of the military and of war industry.

Britain's Interest in India's Development

In 1943, if we count Lend-Lease, America's exports to India—exclusive of military exports—surpassed Britain's for the first time in history. Exports from the United Kingdom were actually down 50 per cent as compared with 1937. During the war, all of India's public debt to Britain (estimated at £375 million) and perhaps half of private British investment (which, according to some estimates, brought the total British investment in India before the war to as high as £1,000 million) has been retired. Loss of overseas investments will compel Britain to increase her exports in order to maintain the prewar level of imports. To assure even a prewar standard of living, British experts estimate that it will be necessary to expand her exports materially. In addition Britain must find the means to repay the wartime debt which has accumulated to India's credit in London, and which is reported to have reached a total of \$4 billion by the end of 1944. It is no longer possible to restore Britain's prewar economic relations with India. As Secretary of State for India in the British cabinet, Mr. Amery recognized the new situation as early as July 15, 1943, in a noteworthy speech delivered before the Royal Empire Society: "That India is and will remain a predominantly agricultural country is a basic feature of her situation. At the same time she has in her all the latent resources both of raw materials, of power and of human skill to make her a great industrial country. To develop her own industries to the fullest possible extent both for their own sakes and in order to raise the standard of living of her agricultural population is the natural and proper ambition of all patriotic Indians. Its fulfillment will no doubt involve a very considerable diversion in the character of India's import trade. It is for us not to deplore that diversion because it may affect some old-established British export lines, but to be before others in recognizing its character and taking full advantage of it. In the immediate post-war period our opportunity for co-operating most ef-

fectively with Indian requirements and Indian aspirations will no doubt be in the provision of capital goods that India will most urgently need for industrial re-equipment and expansion. Later on it may lie more in the provision of more specialized types of consumers' goods that the growth of India's prosperity may call for. In either case our success will correspond directly to the extent to which our trade policy is one of whole-hearted co-operation in India's effort to raise herself on to a higher plane of economic efficiency.

"With that whole-hearted spirit of co-operation there must also go an equally whole-hearted jettisoning of any lingering survival of the idea that India is in any sense a reserved market for British trade or for British capital. The men who will direct India's enterprises or who will control her economic policy will only be willing to accept that if there is behind it no assertion of implication of British domination in the interests either of British firms as such, or of British economic policy. It is essential for a fresh and hopeful start in the economic relations between this country and India that there should be no vestige of the idea that in the last resort the Government of India's economic policy is answerable to control by the government of the United Kingdom, or that British firms or British goods have behind them any other backing than that they would receive from their government in any other country, whether within or without the British Commonwealth. It is by their own merits that they must stand or fall. It is on those merits that I believe they can yet, in a prosperous and expanding Indian economy, increasingly share in that expansion to India's true benefit and their own."

Not only British but American and international trade and prosperity will depend in considerable measure upon the degree to which it will be possible for India to realize her hopes of economic development.

V. RECENT TRENDS

It is instructive to compare the pattern, as it begins to take shape in 1946, with the plans put forth in 1944.

Economic Implications of the British Cabinet Mission Proposals

The political implications of the Bombay Plan were never adequately stated, but the authors did say that:

"Underlying our whole scheme is the assumption that on the termination of the war or shortly thereafter, a national government will come into existence at the center which will be vested with full freedom in economic matters."

According to the British Cabinet Mission's proposed constitution, however, the central government, far from being vested with "full freedom in eco-

conomic matters," would be limited in its powers to foreign affairs, communications and defense. It would have no power to plan economic development."

"Regional grouping," the Bombay Plan warned, must not be permitted to "disturb the economic unity of India," but regional grouping is the essence of the Cabinet Mission's constitutional plan. It is true that some of the Provincial Governments have been diligent in the preparation of plans for provincial development and improvement, and that this activity might be inherited by the regional groups under the proposed constitution. Even if the standard of living is raised in certain regions, however, the result of uneven development may well be the diversion of capital to cheap labor areas. The increasing tendency to locate factories in the Princes' States in recent years has already attracted the attention of observers.

The Government of India's Interest in Economic Planning

The Bombay Plan became the principal topic of political discussion in 1944. The Government of India, in the spring of that year, invited one of its authors, Sir Ardeshir Dalal, to join the Viceroy's Executive Council ("cabinet") as Member for Economic Planning and Development. In October the Government published a "Second Report on Reconstruction Planning," which outlined objectives similar to those projected in the Bombay Plan. Sir Ardeshir has since resigned, however, and his department has been dissolved, although the various industry panels continue to meet and are expected to submit their recommendations to the Interim Government. The new government has also established a Planning Board, under the distinguished leadership of Mr. K. C. Neogy. Mr. John Matthai, who is credited with being the brilliant drafter of the Bombay Plan, was appointed Finance Member in the original Interim Government under the Cabinet Mission plan, but when the Moslem League agreed to join the government Lord Wavell appointed a Moslem to the Finance Department and Matthai left the government.

Foreign Capital

Under the terms of the Anglo-American loan, India will be asked to scale down somewhat the sterling credits which were earned at such cost in inflation and famine, and which have been counted on so heavily in all plans for India's development. After the total value has been reduced, the remainder will be set free on an announced schedule for Indian expenditure. When accompanied by the weakening of Imperial Preference, this means that American business will have greater access to the Indian market. When the International Bank for Reconstruction and Development starts making loans, it may be able to supply a part at least of the capital India needs.

Whatever the source of foreign capital, it is less and less likely to be devoted to a planned development of the country. The denial to the central government, under the Cabinet Mission's proposed constitution, of any power to plan economic development is only one aspect of a departure from the concept of national planning. The other aspect of the change is illustrated by the private arrangements with foreign capital which are currently being made by Indian industrialists, and particularly by the very individuals who once affixed their signatures to the Bombay Plan. In June 1945, for instance, Birla Brothers, Ltd., announced the formation of a company for the production of the first "Indian-made" car. Apparently, however, this car will merely be assembled in India, from parts made by the Nuffield organization in England, which will take between 25 and 30 per cent of the shares in the new company. The agreement announced in December 1945, between the Tata interests and the Imperial Chemical Industries, is another significant development.

British policy on this question was expressed by Lord Wavell in a speech before the Associated Chambers of Commerce of Calcutta on December 10, 1945:

"I firmly believe that cooperation between British and Indian enterprise in an atmosphere of goodwill provides the best means for the industrial development of India in the quickest and most fruitful manner." More specific suggestions were made by Professor A. V. Hill, in the course of his tour of India in 1945, as Secretary of the Royal Society:

"... (The Indians) have to realize, however, that British industry is not going to do these things for love only. I do not think they can expect British industry to erect by its skill and resources something which it is to have only a minor share in controlling. If they want development they must go equal shares with the people here. Going halves seems a fair proposition." (*Bharat Jyoti*, April 1, 1945.)

The "Interim Government"

The great contribution of the Bombay Plan lay in its recognition that the industrialization of India could not be accomplished except on the firm basis of a national program to raise the standard of living, and that it was impossible to expect private initiative to achieve such a gigantic task alone. The period since the end of the war, however, has been marked by a declining interest in national planning on the part of the great industrialists, a general drive to reduce wages and an increasing conservatism in the leadership of the Congress Party, where the industrialists are a powerful influence. Indicative of the attitude in these circles on the "condition of the people" question is the statement of Vallabhai Patel, the powerful Congress Party organizer and now Home Member in the Interim Government:

"A cultured worker leading a pure and simple life and living on the sweat of his brow, can lead a life many times happier than that of the mill agent or any other rich person." (Quoted in the London *Economist* of January 12, 1946.)

While the Congress Party has been correctly regarded throughout the world as the leading party of the Indian national movement, it is important in attempting to forecast economic trends to observe that the recently appointed Interim Government, in which the Congress is a major participant, is a predominantly right-wing government (Nehru, the vice-president, alone having a reputation for liberal views), and that neither it nor its constitutional successor will have the power, even if it possessed the will, to put into operation such a program as the Bombay Plan demonstrates is essential to check the course of famine and economic stagnation.

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CHAPTER XV

THE INDUSTRIALIZATION OF CHINA

by LILLIAN KESSLER

The unrest which swept China after World War II was symptomatic of more than the political differences which had led to civil war in 1927. Social and economic aspirations, suppressed during the eight year conflict with Japan, were fanned by association with the more highly industrialized countries during the war. Highlighted by conflict between the National Government, under the leadership of Generalissimo Chiang Kai-shek, and the Communists, who included almost one-fourth of China's 450 million people, the attainment of national unity became China's key post-war problem. Throughout 1946 United States General George C. Marshall, acting as mediator between Central Government and Communist leaders, worked unceasingly to persuade both factions to reconcile their differences and form a coalition government. Yet a year after V-J Day, no agreement had been reached, civil war continued and all negotiations appeared on the verge of breaking down.

Economic recovery, after eight years of devastating war, was a slow process. Famine threatened in many parts of the country as China's primitive transportation attempted to cope with the problem of moving stranded refugees to areas where food was available and of moving food to the interior. UNRRA supplies arrived in inadequate amounts to meet emergency needs. To the administrative problem of taking over areas occupied by Japan was added the technical problem of assuming control of Japanese-developed industries in the eastern provinces. Manchuria, an integral part of China until Japanese seizure in 1931, was slowly being evacuated by Soviet troops six months after V-J Day. Concern over the economic objectives of the Soviet Union in that rich northeastern area troubled the Chinese who looked to Manchurian resources and industries as a foundation for the country's industrial development.

China looms large as a potential field for development. Not only does she have the greatest single national population in the world but she is fortunate in possessing many of the natural resources required to develop an industrial economy. Although at least eighty per cent of her people live by

agriculture, China's untapped energy resources and mineral deposits represent an unknown potential for industrial expansion.

All groups in China today are convinced that only through industrialization and the fullest use of the country's natural resources and manpower can China emerge as a strong national entity. There is no longer any concerted resistance to industrialization as there was in the middle nineteenth century when Western culture and Western machines were looked upon with equal suspicion. The Chinese have lived through a technological war and they are now determined to profit by the benefits that technology can bring them in peace. Through science and industry they intend to obtain for themselves better food, housing and clothing; improved sanitation and medical care; modern means of communication; and more widespread education. Moreover, the Chinese never again want to defend themselves with bare hands. They firmly believe that their natural resources, combined with their great reservoir of manpower, can be welded into a sound industrial structure that will give them a place among the important nations of the world.

IMPACT OF THE WAR

Agriculture

When the Chinese lost 40 per cent of their agricultural and livestock production as a result of the Japanese occupation, they suffered a direct blow to the backbone of their national economy. Despite the growth of industry, China is still primarily an agricultural country. During normal years, agricultural products supplied China's principal industries as well as most of her food requirements. Farm products also constituted 80 per cent of the country's prewar exports.

China occupies first place in world production of rapeseed, sesame and soybeans; second place in the production of rice, wheat, barley, tobacco, groundnuts and silk; and third place in the production of maize and cotton. Other principal crops include tung oil, sugar cane, tea and linseed. Yet the Chinese people as a whole are undernourished, subject to deficiency diseases, and have a short life expectation. They live essentially on a vegetarian diet, with cereals constituting the largest part of their total energy intake. Although soybeans are an important source of vitamins they are not consumed in sufficiently large quantity to make up for the general lack of animal proteins, minerals and vitamins.

While China has one-third less land under cultivation than the United States, she must produce enough to feed a population more than three times as large. The small area per farmer keeps productivity per man low. Much of the soil has been depleted by cropping and erosion; floods and droughts have periodically destroyed arable farm land; and the lack of fertilization and pest control has lowered the country's potential productivity.

The few improvements introduced in the decade before the war resulted in a marked increase in agricultural production. Experimental stations, granaries and co-operatives were established; dykes were built; and the number of irrigation canals was increased. Certain products, particularly cotton and wheat, were improved. Administrative reforms included slightly lowered taxes, revision of tariff rates, and the standardization and grading of export products.

The war brought this progress to an abrupt stop. Military operations interfered with cultivation in extensive areas and both productive land and industries closely related to agriculture were lost to Japan. China was cut off from her markets for agricultural exports and from the vital rail and coastal transportation required to move food supplies within the country. The unoccupied areas had to support the armies and millions of additional refugees from the east, with resulting sharp declines in already low food standards.

The Central Government made many efforts to improve agricultural conditions in unoccupied China. New ministries of Food, and of Agriculture and Forestry were set up; the farm loan system was strengthened; and available supplies were rationed with some success. Despite these efforts, the end of the war found Chinese agriculture less productive than a decade earlier.

In the Communist areas of North China more radical agrarian reforms were introduced. Many large estates of absentee landlords and of those who had gone over to the Japanese were confiscated. Where landlords chose to remain, their property rights were recognized but rents were established at equitable levels. In more moderate degree, agrarian reforms of this type are eventually needed throughout all of China if the introduction of modernized agriculture is to be made effective.

Transportation and Communications

China has often been referred to as a land of heavy burdens, and perhaps there is no place in the world where this is a more literal description of the constantly moving mass of industrious humanity which makes every day in China's crowded cities look like a market day. Weighted down with foodstuffs and merchandise, or pulling heavy rickshaws, thinly-clad pedestrians and barefooted coolies scramble through narrow, congested streets to reach their next destination. Outside of a few modern cities, even water required for the barest household needs is hauled by the coolie who earns his living trudging from river to household with his precious burden, acting as the "human plumbing" of a makeshift sanitary system.

Even though railroads, highways and shipping capacity were expanded before the war, the country is mainly dependent on the most primitive

means of transportation. Fifty per cent of all agricultural products in China is transported by human carriers, forty-five per cent by man-driven junks and handcarts, and only five per cent by railroads or trucks. In some districts in the interior the wheelbarrow, mules, camel caravans and horseback are depended upon. Not only are these primitive means of moving goods inefficient and slow but, contrary to popular conception, they are far more expensive than modern means of transportation. Shipping by river and other waterways provides the only inexpensive mass transport for most of China.

At the outbreak of the war with Japan in 1937, China had approximately 11,000 miles of railways, 72,000 miles of highways and water shipping capacity of 1,500,000 tons. As a result of the Japanese occupation most of the important transportation routes were lost. Although over 1,000 miles of new railway were built in the interior provinces during the war, so much of this was lost or destroyed that just before V-J Day Free China had only 760 miles of rail lines and less than one-tenth the prewar number of rolling stock and cars.

Highways, which could be built more easily and at lower cost than railways, were depended on for most of the military and civil transportation in wartime China, and 8,000 miles of new road were constructed during the war. Even so, Free China in June 1945, had less than half of the country's original highway mileage. These roads, of course, were far below American standards and few were passable in bad weather. The lack of trucks and fuel added to the difficulties in meeting wartime needs. Deterioration of available vehicles left only 4,000 trucks still operating in Free China in 1945 in contrast to the prewar number of 68,000 motor vehicles in all of China.

Water transportation was most seriously affected and by the end of the war only 414 ships, totaling 46,789 tons, were operating in the rivers of Free China. Telecommunications were also drastically reduced; over half the original 66,000 miles of telegraph lines being lost. However, a number of telegraph and long distance telephone lines, as well as radio stations, were installed to facilitate military operations.

Although the famous Burma and Stilwell Roads, built at enormous sacrifice, were vital to the wartime defense of China, they may have little post-war significance. The Stilwell Road has already been abandoned and instead cheaper water and rail routes will again be used.

At the end of hostilities China found itself with a sadly worn-out and damaged transportation system. While reparations claims have not yet been announced, large expenditures will be required for ships, rolling stock, roadbed and other facilities before China is back even to her prewar status.

Industrial Development

Although China reached the peak of her industrial activity in 1937 there were only 3,000 factories in the country at that time, including those owned by foreign firms. The textile industry, which was by far the most flourishing of all her industries, had 5,500,000 spindles. With the fourth largest coal reserves in the world, China was producing five per cent of the amount of coal mined in the United States and less than one per cent of the pig iron and steel. The United States produced as much steel in 1870, when our population was only forty million, as China was turning out for her four hundred and fifty millions the year the Japanese launched their attack.

During the first year of war at least three-fourths of modern industry in China was destroyed or seized by the Japanese, including all the new or partly-completed plants that had been founded by the Nationalist Government. Although the limited transportation facilities were clogged with fleeing refugees, the Government made every effort to salvage as much machinery and industrial equipment as it could transport to the interior, so that a new start might be made with at least a modicum of essential wartime production. Struggling with the tightest blockade in the history of the world, and with an inflation spiral that proved to be even more disastrous than the lack of materials and equipment, the Chinese created new industrial centers in the refugee-choked hinterland.

By September 1944, the Ministry of Economic Affairs reported a total of 4,517 registered Government and private factories in Free China, with over 1,200 factories located in Chungking alone. At least another 730 plants were distributed among other cities of Szechwan province where the capital was located. Many of these "factories," of course, were small; some employed only three to five workers. These newly established industries included mainly chemical works, followed in order by cotton mills, machine works, hardware factories, metallurgical works and uniform factories; other plants produced tobacco, educational equipment and supplies, and electrical accessories. By 1945 the Government itself, through the National Resources Commission, was operating over a hundred sizable factories which produced electrical supplies, metallurgical products, machines, chemicals, and refined petroleum. A Chinese WPB, organized in November 1944 by Donald Nelson and a group of American industrial experts, contributed to increasing production in these Government plants and improving their efficiency, but was just beginning to be effective when the war ended.

The new wartime industries, added to those recovered from the Japanese, when the reoccupation is completed, will give China a somewhat broader basis for industrial expansion and will stimulate a dispersion of industry throughout the country. Many of the wartime plants, particularly those moved to the interior, are badly worn-out and will contribute

little to post-war output. Industrial development in Free China also stimulated the search for new resources, and machine skills were introduced for the first time in formerly isolated areas.

Industrial co-operatives, organized in 1938 by Rewi Alley, a New Zealander, caught the imagination of the people and gave them a sense of accomplishment during the dark war years. Assisted by Government loans, they produced many essentials for both military and civilian needs, including small machine tools, textiles, and general consumer goods. For the armies of China they made blankets, uniforms, leather belts and boots, medical cotton, gauze and cooking utensils. For civilians they made necessary items in short supply such as paper, soap, fertilizers, agricultural implements, drugs and foodstuffs.

When Japan surrendered, the Chinese Government fell heir to a large amount of new Japanese industrial equipment including electrical generating facilities, alcohol and chemical plants, and other new industrial installations. These were mainly in North China and many have been seized by the Soviet Union as Japanese property. Many of the war plants, of course, will require reconversion for peacetime use. Prewar industrial capacity for iron and steel, textiles and other industries in the north were relatively undamaged during the war, while southern China was severely devastated. The sudden end of the war without serious further damage to industry by bombing or military operations, plus the new Japanese plants which remain, offset at least in part the destruction suffered in Chungking and other heavily bombed industrial areas.

Inflation

Extreme inflation of the currency in China was a direct result of such wartime conditions as the loss of the country's most productive and developed regions, the Japanese blockade and the issue of large amounts of bank notes for military expenditures.

Prior to the war the Chinese yuan was stable, the rate of exchange being one hundred yuan to the U.S. \$29.65. The real deterioration of the price structure followed the outbreak of the war and the Government's efforts to finance its wartime expenditures. By November 1942, the wholesale price index of fifty commodities in Chungking was seventy-six times higher than the average for the last prewar year, and retail prices were skyrocketing. The official Chinese exchange rate by this time had depreciated 82.5 per cent. By June 1944, wholesale prices had increased 500 per cent over December 1942 levels. Price discrepancies varied widely throughout the country because of increasing difficulty in internal transportation but the inflationary trend affected all areas.

The impact of this inflation fell most sharply on the fixed-income government workers, who were eventually given a direct rice allotment from the

Government to offset some of their vanished buying power. Rural groups suffered less since they received higher prices for their products and were able to furnish a large part of their own needs. Landlords, who derived most of their income from crop rents, and the trading interests were least affected by the inflation. Factory workers were often provided by plant management with housing, medical facilities and food which compensated somewhat for the increased cost of living.

Victory did not end the inflationary pressure, for goods were still short, money in large supply, and government expenditures high. Many types of currency were in circulation, including those issued by the various puppet regimes. In many parts of China trade began to be conducted in American dollars instead of the relatively valueless Chinese currency.

Before China can resume profitable trade with other countries, the inflationary spiral must be checked. The supplies which were received from UNRRA early in 1946 and the marketing of confiscated Japanese-owned goods served as a moderate check to the inflation trend. Imports purchased with loans from the United States, Canada and other countries, and from the International Bank, should help to start China on the road to economic recovery. As war expenditures are terminated and as the products of Chinese industry become increasingly available for domestic consumption and export, the wartime inflationary gap will diminish and inflation should cease to be such an unmanageable problem.

Education

One of the spectacular features of China's wartime resistance was the mass migration of universities, colleges and technical schools which were re-established in temporary sites in unoccupied China. Of the 108 institutions of higher learning in existence in 1937 before the outbreak of hostilities, 91 were destroyed or occupied by the enemy. Yet only 19 institutions actually discontinued their activities as a result of the war. Most of the others were transplanted in the interior, and forty-three new colleges and universities were opened including teachers colleges and medical and technical schools. Curricula were expanded and modified to meet the changing emphasis from academic to scientific and technological research, and new departments of chemical and electrical engineering, aeronautical engineering, farm irrigation and animal husbandry were established. Graduate study, particularly in engineering, was materially expanded. By 1944 half of the 70,000 college students were studying engineering, medicine, agriculture, or were in some other scientific or technical field.

Enrollment in secondary educational institutions also increased despite the fact that 40 per cent of those existing in 1937 were in areas occupied by the enemy. Short-term vocational courses were instituted to meet the urgent need for skilled and semi-skilled workers in occupations important in war.

Headway was made in the expansion of primary school education as a result of the Mass Education Movement founded by Dr. James Y. C. Yen. During the war, he expanded its activities to include the education of the masses concerning the need for resistance. Through the use of posters, cartoons, news bulletins, mass meetings; theatrical performances, education classes and house-to-house calls, the people were gradually awakened to the significance of the war.

The first five-year plan for people's education went into effect in August 1940, continuing the work of the Mass Education Movement. It called for the early establishment of one nucleus school for every town or village and one people's school for every group of 100 or 150 families. Each year the number of schools and their enrollment were to be gradually increased. Although China's population was 80 per cent illiterate in 1938, during the first four years of the war over 46 million illiterates were educated, reducing illiteracy to 70 per cent. This educational process has been hastened by the introduction of the phonetic system.

Human Effects of the War

The suffering of the Chinese people during the war is not easily described in terms of casualties, the extent of the occupied areas and the physical destruction of their cities. Tens of millions of people were driven from their homes, or forced to leave them in wrecked shambles. Millions more took to the road with a stoicism that matches any in the annals of history.

Official military casualties in the war by July 8, 1945, passed the three million mark, of which more than one and a third millions were deaths. An estimated 40 millions of the civilian population were direct victims of the war. Of these a large percentage was the displaced population which had to be fed, cared for and when possible given productive work in the over-crowded cities of the western provinces.

This shift of large population groups within the country was one of the significant features of China's wartime experiences. The mingling of Shanghai factory workers with peasants and farmers in China's hinterland sharply intruded on the lethargy that has gripped the Chinese masses for centuries. For the first time many saw and handled machinery; millions learned to read and write, especially in Communist China; and women discovered that they could engage in factory work and many of the professions as well as men. In the industrial co-operatives and the many social movements of Free China, new ideas of democratic group action replaced the traditional mores of the family institution.

POST-WAR PLANS

The unmistakable trend in China is towards a state-controlled economy with the scope of public enterprise much larger than in the United States,

but not so all-inclusive as in the Soviet Union. The Guiding Principles for Economic Development, adopted in December 1944, by the Supreme National Defense Council, expressed the hope that foreign capital would be invested in China and that free enterprise would expand and serve as an impetus to national growth. The important reservation was made that such investments should "not prove detrimental to our sovereign rights or to the realization of our economic plan."

The Government recently specified certain state monopolies from which any form of private ownership would be excluded, namely: postal service and telecommunications, arsenals, mints, principal railroads and large-scale hydraulic power plants. While private capital would ostensibly be free to engage in other than state monopolies, the Government reserved the right to engage in enterprises which private capital is not fully capable of developing or which are regarded as being of special importance such as steel plants, large-scale petroleum fields and air and water transportation. This reservation is elastic as evidenced recently when it was interpreted to include textile production. Private undertakings will probably be subject to Government control in regard to plant location, production capacity, kind and quality of output and issuance of shares and bonds. A promise of financial assistance as well as of aid in securing transportation facilities has been made by the Government to all private enterprises which conform to the general plan for economic reconstruction.

New commercial laws affecting foreign business interests indicate the same trend towards state control and regulation. Following the abolition of extraterritoriality in 1943, a series of individual laws affecting land titles, registration of foreign companies, taxes, copyrights, patents and shipping were the subject of negotiations between the Chinese and foreign governments, pending the ratification of new treaties of commerce. Although points of difference were gradually being adjusted during the months following V-J Day in order to attract foreign investment, considerable concern was felt by foreign business interests in regard to the interpretation and administration of these commercial laws. The uncertainty of future national policy with respect to land ownership and registration of foreign companies, the latitude which local officials have been given in inflicting penalties for non-conformity to the Chinese Company Law and the insecurity of current copyright and patent laws were temporary deterrents to American and other private interests planning to do business in China. The establishment of economic and political stability can be secured only if the present government is broadened to represent all major groups. Yet their participation will in all probability create further uncertainty concerning China's future economic policies.

The general trend towards a semi-planned economy, despite the problems which it presents to foreign business interests and, to some extent, to

private business interests in China, indicates a determination on the part of the Chinese to industrialize as rapidly as possible. This emphasis on economic planning has grown steadily, from the time that Sun Yat-sen first appealed to the industrialized nations of the world to aid financially and technically in modernizing China to the present "five year" plans for national development. The following brief survey of the evolution of these plans may give the student and businessman some perspective in understanding and interpreting current economic policies in China.

Early Economic Planning

The close relationship between political stability in China and international peace was fully recognized by Sun Yat-sen, first president of the Chinese Republic and philosopher-prophet of a modernized China. Writing shortly after the end of the first World War he predicted that "unless the Chinese question can be settled peacefully, another world war greater and more terrible than the one just past will be inevitable." Sun Yat-sen proposed a comprehensive plan for the *International Development of China*, in a book which appeared under that title in 1921. Development of the country's vast resources by international co-operation, he argued, would redound to "the good of the world in general and the Chinese people in particular."

Believing that it would require both state planning and private enterprise to develop extensive transportation, mineral, agricultural and industrial projects in China, Sun Yat-sen proposed a complementary division of activity between private and national undertakings. In bold strokes he outlined an ambitious program for the industrialization of China but contended that "all matters that can be, and are better carried out by private enterprise, should be left to private hands which should be encouraged and fully protected by liberal laws." Although Sun Yat-sen placed greatest emphasis on the basic industries needed to establish an industrial economy in China, he also stressed the importance of industries which would improve the standard of living of the workingman by providing the material essentials of life, such as food, clothing, shelter, means of locomotion and the printed page.

The new revolutionary parties, the Kuomintang (Nationalists) and Kungchintang (Communists) had united in 1924 under Sun Yat-sen's leadership. One year after his death in 1925 this union collapsed. The Communists established themselves in separate territories under their own jurisdiction, and concentrated on agrarian reforms affecting land distribution and taxes. The Nationalist Government began to draw up large-scale plans based on Sun Yat-sen's proposals. In 1932, following the Japanese conquest of Manchuria, the first National Economic Commission was appointed under the chairmanship of Dr. T. V. Soong. As a result of its work

some progress was made in the construction of highways, the building of dykes and the improvement of agriculture.

In 1935, when Chiang Kai-shek established his leadership over Nationalist China following his campaign against the Communists, the Government appointed a Committee for Planning the Reconstruction of the National Economy, which produced a modest three-year plan for the establishment of basic industries. Some of the plants proposed in this plan were partly finished and in operation when the Japanese launched their offensive against China on July 7, 1937.

China's Destiny

Late in 1942, when the efforts of the United States began to foreshadow the eventual defeat of Japan, the Chinese Government again concerned itself with plans for post-war reconstruction. Chiang Kai-shek requested the various ministries to submit programs stating definite objectives to be reached in each field of development within a ten-year period.¹ The hastily prepared figures were reviewed by him and with some modification were included in his book *China's Destiny*, which was published in China in 1943. It presented tentative goals, both long-range and a decade ahead, for transportation development, a communications network, harbor development, industrial and mineral production and the improvement of agriculture. Although this book has not been published outside of China, the specified production goals have received considerable attention in this country.

Selected goals from *China's Destiny* may be compared to United States production figures in 1939 as shown on the opposite page.

The post-war plans in *China's Destiny* reflected the increasing emphasis on transportation and communications development. The only light industry given much consideration was the textile industry. An industrial conference of governmental, technical and industrial leaders met early in 1943 to review China's post-war plans. Although the revised goals set at this conference were never published, they are reported to have followed in general the program in *China's Destiny*.

None of these early plans attempted co-ordination of the several production goals. Although scaled down from Sun Yat-sen's original formulation, they still represented somewhat unrelated objectives rather than a practical engineering analysis of production possibilities and of requirements for a balanced output. Some attempt, however, was made to relate plans for industrial production to those for industrial training.

From 1943 to 1946, Chinese leaders worked in close co-operation with engineers and technicians in the United States in formulating more specific and balanced plans for China's post-war development. The Chinese Cen-

¹ The following data and statements are based on original Chinese materials, some of which have not yet been published in other languages.

SELECTED GOALS FROM CHINA'S DESTINY—TEN YEAR PLAN IN COMPARISON WITH THE UNITED STATES
(All quantities in thousands)

Item	Unit	China at end of ten years	U.S.—1939 (or prewar normal)	Percent- ages— China to U.S.
Railways	Kilometers	20	376	5.1
Highways	"	253	4,814	5.2
Harbor accommodation	Total tonnage	100,000	467,000	21.4
Commercial planes	Units	12	13	92.3
Locomotives	"	3	45	6.6
Freight and passenger cars	"	44	1,719	2.5
Automobiles (including trucks)	"	452	30,000	1.5
Electric power	Kilowatts	6,200	40,318	15.3
Radio receivers	Units	4,500	45,200	9.9
Radio stations	"	2	0.7	285.7
Cotton mills	Spindles	3,000	25,261	11.4
<i>Annual Production</i>				
Coal	Tons	150,000	446,000	33.6
Iron and steel	"	5,560	88,000	6.3
Copper	"	15	712	2.1
Lead	"	13	414	3.1

tral Planning Board was strengthened, and the co-ordination of post-war economic plans was made its final responsibility. The various Government departments sought technical help in working out the practical details, and representatives of the Chinese National Resources Commission in the United States looked to American technical advice in analyzing specific industrial problems.

Within the Chinese Government itself there were marked differences of opinion concerning the emphasis to be given to various phases. The Army group urged concentration on heavy industries during the first ten years at the expense of consumer goods production. The non-military government officials felt that China would have to rely on exports for her financial recovery and should therefore build up consumer goods industries along with the heavy industries. Dr. Wong-Wen-hao, Minister of Economic Affairs, emphasized the expansion of mining activities, transportation development and the modernization of agriculture as a basis for a balanced industrial program. Dr. T. V. Soong, President of the Executive Yuan, generally agreed with the latter group. This conflict within the Government continued after V-J Day.

The FEA "Guide to the Industrialization of China" (Taub Plan)

As one phase of American technical help to China during the war, an important contribution to her industrial planning was made by the U.S.

Foreign Economic Administration. In response to a request of the Chinese National Resources Commission for engineering plans for industries to be given first priority in China after the war, a comprehensive "Guide to the Industrialization of China" was completed early in 1945 under the direction of Alex Taub, prominent automotive engineer and Chief Engineer of FEA.

The main objective of the *Guide*, which appeared in ten volumes comprising 3,400 pages, was to provide reliable engineering data for an integrated five year industrial plan. The scope of the plan was limited so that it would not entail an expenditure of more than two billion dollars. Consequently it did not include expenditures for the reconversion of existing industries or the development of large-scale hydroelectric projects of the TVA type. It recommended a dispersion of industry throughout north, central, and south China based on raw material sources, accessibility of fuel and power, and the availability of transportation and labor.

Representative industrial firms in the United States assisted the FEA engineers in determining, for each type of industrial plant, the minimum size which would prove both profitable and beneficial from a national point of view. They also provided estimates of the cost of buildings and equipment, of the power required, and of operating personnel needs. American practices were modified to meet Chinese conditions. Although stress was placed on the use of modern rather than obsolescent equipment a lesser degree of mechanization was proposed than is generally employed in similar plants in the United States.

The table on page 297 summarizes the over-all aspects of the plan.

Specific recommendations in each industrial field were arrived at by considering two basic factors: the required output for the particular industry in order to supply the other industries proposed in the plan and the available resources for developing the industry. Certainly the most rapid industrial expansion could be achieved by making the best possible use of those mineral and agricultural resources which China had in greatest abundance. Since her coal reserves are substantial it was suggested that coal production be increased by fifteen million tons, materially increasing prewar output. Iron ore production, because of limited reserves, was to be increased by only three million tons. Mills and smelters were recommended for processing tungsten, antimony, tin and mercury of which China has large reserves. Three new modern steel mills, with a gross capacity of 900,000 tons, were suggested as the minimum for meeting the steel requirements of the other industries. Additional aluminum plants were recommended, to utilize China's bauxite resources.

The chemical phase of the program was concerned primarily with production of the basic chemicals from which countless other products could be derived, with special emphasis on the use of indigenous resources such as

SUMMARY OF THE TAUB PLAN

Industry	End products	Number of plants	Cost of plant and of machinery (millions of dollars)	Direct plant employment (thousands)
INDUSTRY SUMMARY				
Mining and metallurgy	Ores, metals, fuel, stone	170	280	120
Chemicals and basic processing	Chemicals, drugs, fuels, processed items	105	221	29
Manufacturing	Mechanically produced items	192	245	75
Power	Commercial electrical power	250	88	10
Food processing and distribution, and fishing	Food and other agricultural products	236	96	467
	Other expenses		43	1
Sub-Totals		953	973	702
TRANSPORTATION SUMMARY				
Railways	Improved and expanded systems		509	78
Highways	All-weather roads		165	..
Automotive	Commercial trucking fleet, shops		223	171
Sub-Totals			897	249
TOTALS			1,870	951

tung nuts, vegetable oils, sugar cane and fibers. Manufacturing industries were selected which would produce many of the primary industrial tools, parts, and matériel required by other industries. No plants were proposed for the production of highly complicated products such as precision instruments and scientific apparatus. Since the Chinese Government was preparing a five year plan for power development to meet general industrial and domestic requirements, the Taub Plan covered only power facilities required to service the additional industrial plants it specifically recommended.

The modernization of agriculture as a basis for industrial development was an important feature of the *Guide*, with detailed suggestions made for many research, educational, and industrial steps for agricultural improvement.

Plans for expanded and improved transportation facilities, which would require practically half of the total expenditure, included the construction of new railway lines and an all-weather highway system, automotive devel-

opment through purchase of 75,000 trucks and the manufacture of bus bodies in China. Post-war air transport and the development of a telecommunications system were omitted since they were being given separate consideration by the Chinese Government.

An industrial training program for the training of Chinese in the United States as managers, technicians, supervisors and training instructors, was developed in co-operation with engineering schools and industry. Considerable attention was given to the adaptation for use in China of methods and techniques utilized during the war in this country, particularly in work-simplification, in-plant training, and visual aids. Suggestions were also made for the establishment of plant and community hospitals and of industrial hygiene safeguards. A central institute of industrial research was recommended which would make its findings available to private industry.

This engineering study did not attempt to cover existing industry, or to provide a completely balanced plan for China. It was solely an engineering guide to point up the basic elements of industrialization, and to indicate the need for integrating related industries. Chinese industrial planners, both in the United States and China, have used it as a pattern for subsequent industrial plans and have made much use of the detailed engineering data which it includes.

Current Industrial Plans

The sudden end of hostilities in August 1945, gave the Chinese an almost harried sense of urgency about completing their plans and proceeding to the action stage. Under the direction of T. V. Soong, a new three year program for transportation and industries was prepared as a basis for requesting loans from the United States and Canada. Twelve hundred Chinese trainees had arrived in the United States by the end of 1945 and American engineers and technical personnel were being recruited to give industrialization its initial push in China.

As a consequence of the industrial windfall of Japanese plants left in north China after V-J Day, the Chinese began to reconsider their earlier plans. They now stress (a) the reconstruction and restoration of the post-war capacity; (b) the reconversion of Japanese war plants for peacetime output; and (c) the further enlargement of industrial capacity to supplement these. The ultimate outcome on additional reparations in kind from Japan may further modify these plans.

If China by solving her domestic political problems obtains the loans needed for carrying through the plans worked out during the last half of 1945, she expects to spend approximately two billion dollars for the purchase of transportation and industrial equipment within a five-year period. Most of this expenditure would be made in the United States, particularly if a large loan is granted by the U.S. Government. Over 800 million dol-

lars would be spent on transportation and communication equipment of which approximately 47 per cent would go into railroad equipment, 24 per cent for water transport, 18 per cent for highway construction and repair, eight per cent for telecommunications, two per cent for air transport and one per cent for modernizing the postal service and for engineering and training expenses. The purchase of industrial equipment would require about 900 million dollars, with over three hundred million dollars of this amount supplying the mining and metallurgical industries. Almost three hundred million dollars would be expended for manufacturing equipment required for producing electrical goods, mechanical and transportation products and consumer goods. Chemical plants would require the expenditure of over a hundred million dollars. Anticipating the recovery of Manchuria and Formosa, the Chinese have estimated that at least two hundred million dollars would be spent on improving industrial and transportation facilities in those two areas during the next five years.

The prospect of new markets and of setting up branch plants is intriguing many concerns which previously had not done business with China, as well as the old "China hands." Many have indicated an interest in the export of technology to China rather than in long-term investments. Since the Chinese are anxious to acquire managerial and technical skills, they often make contracts with foreign industrial firms contingent upon an agreement to accept Chinese trainees in their plants.

The central responsibility for Government planning in China is now vested in the Chinese Supreme Economic Council, organized in December 1945. Comprised of the chiefs of the various Government ministries, this Economic Council has greater responsibility than the Central Planning Board in the economic field. It has been given authority to achieve the fullest and most effective utilization of Chinese resources, to establish essential broad policies, to formulate plans and programs, and to co-ordinate the economic activities of the various government departments. One of the first important activities of the Council was the establishment of a rigid control of foreign exchange and of a system of import and export trade controls.

In addition to plans for the development of an integrated industrial system, Chinese planning also covers all phases of national development, social as well as economic. The following brief discussion of some of the other plans now under consideration may indicate the range of economic planning in China today.

Yangtze River Hydroelectric Project

A project for harnessing the Yangtze River along the lines of the American "TVA" is now being studied. An arrangement has been concluded with the United States Bureau of Reclamation which will furnish technical aid in planning the project. An intensive six months' survey of suitable sites on

the Yangtze River was made by Dr. John L. Savage, former Chief Designing Engineer of the Bureau, who will serve as consulting engineer for this undertaking, one of the largest of its kind in the world.

Industrial Co-operatives

Plans for expanding industrial co-operatives throughout China are now being studied. These co-operatives, or village industries, will be an important factor in helping China make the transition to an industrial economy. They can serve as training media in developing industrial skills, and as economic units for various educational and social programs. Long before the benefits of modern industry can reach large numbers, they can give millions of Chinese an added means of livelihood.

Agricultural Plans

Present Chinese agricultural plans provide that after one year of immediate relief and rehabilitation, the next five years will be devoted largely to reconstruction of the educational, research and extension institutions and organizations destroyed during the war. These plans stress reclamation of new farm land; improvement of production practices, including the use of improved seeds, more medicines, and small irrigation works; improvement of rotations and systems of farming; and modern pest and disease controls. Machinery, such as irrigation pumps, sprayers and dusters will be introduced as well as small tractors and combines for northern China. Experimental stations will be established in regions previously without them, and vocational schools will be expanded. Agricultural extension bureaus existed in only ten or twelve of China's 4,000 *tsien* or counties. It is planned to install them in 500 *tsien* over the next five years.

In animal husbandry, especial attention will be given to reducing the losses from disease, among chickens, ducks, geese and hogs. Production of vaccines and serums, and veterinary services to administer them, will also be expanded. Despite the scarcity of cropland in China, there are some semi-arid regions where livestock grazing might be further expanded. There are also plans to reforest barren, hilly regions; to develop more nurseries to supply the young trees; to set up new forest products laboratories in various regions; and to develop national forest administrations in Manchuria and Formosa.

Fisheries have previously been a small-scale industry, and were mainly on inland waters. It is planned to develop saltwater fishing on a large scale using large boats and new processing plants to dry, salt, or process the catch. Fish offer one of the most promising means to supplement China's scanty animal protein supply. Better nutrition must come in large part, however, from protective foods such as canned milk or dry milk, which can be imported at reasonable cost from regions with more abundant land per

capita, particularly New Zealand and the United States. Along with advancements in farming methods, the introduction of refrigeration, food processing and preservation, and the development of marketing and transportation facilities should have a marked effect on the food consumption of the Chinese as well as bolster the entire national economy.

To initiate this program of agricultural and related reconstruction, China hopes to borrow 400 million dollars to cover laboratory equipment, chemicals, books, and machines.

Economic factors must be dealt with to improve the lot of the farmer, such as a complete modernization and standardization of the tax system. China also faces a serious population problem. The growth in population—now 4 to 5 million people per year—is so large that it would take a rapid increase in industry merely to provide jobs for the new workers, with no reduction in farm population. Pressure of population on the land, in any case, will make it impossible for China to produce for itself as luxurious a standard of food as advanced Western Countries enjoy.

The country's present occupational distribution resembles that of the United States in 1820. The Chinese hope that through a planned and vigorous industrialization program they can make the transition from agriculture to industry more rapidly than did the United States during the nineteenth century. The small size of the average farm in China is the most serious deterrent to efficient farming. It would be completely uneconomical to use agricultural machines on the usual three and one-half acre farm. In the United States, where mechanical equipment is generally employed, the average size of farm is 190 acres.

The National Agricultural Research Bureau of China has reported that there are still 110,000,000 acres of land which can be put under cultivation, adding one-quarter to the farm land of the country. This would involve large programs of irrigation, protection against water or wind erosion, and other large-scale land reclamation and care programs. The shifting of a considerable part of the population from agriculture to other activities would also increase the amount of land available for each farm family, by drawing farm workers to the many industrial, commercial and service activities which economic development will bring in its wake.

Plans for Education

In December 1945, the Chinese Ministry of Education announced a second five-year plan, to go into effect January 1, 1946, in all areas completing the first five-year plan. The aim of this second plan is to establish a national school for every 100 families and institute six years of compulsory education.

The education and training of students and technicians abroad will play an increasingly important role in preparing the Chinese for advanced in-

dustrial undertakings. Over 7,000 Chinese studied in foreign countries between 1939 and 1940. The number dwindled considerably during the war. In 1945 a large group of technical personnel was brought to the United States, financed by Lend-Lease funds and the Chinese Government, to be trained in American colleges and industrial plants. It is hoped that they will constitute the advance guard of China's future industrial managers and technicians.

The great need of China is for adequately trained managers, supervisors, technicians and technical training institutions, both on the college and the secondary school level. In *China's Destiny*, Chiang Kai-shek estimated that China needs, over the next ten years, half a million technically trained college graduates (in every field from engineering to medicine), and another two million technicians trained in secondary vocational schools. In addition to training Chinese abroad and employing many foreigners to work in China, great emphasis must be placed on modernizing and extending her own technical training facilities before China can begin to retrain handicraft workers to operate modern industrialized enterprises. Because of the lack of trained workers many of their training institutions will themselves need to be managed and, to a considerable extent, staffed by foreign technicians and teachers during the initial stage of development.

There is a close relationship between education and industrial progress. An industrial economy cannot be imposed on a people unable to read simple instructions. China's present efforts to abolish illiteracy, develop new skills, and train industrial leaders as well as more teachers, doctors and other professional workers are paving the way for the modernization of China and a better life for her millions.

Significance of Chinese Plans

Considerable skepticism has been expressed concerning the validity of the various plans worked out by the Chinese for their economic development. While they will probably not be carried through as determinedly and ruthlessly as the economic plans of the Soviet Union, which made no allowance for private enterprise, there is every reason to believe that government planning and control will become an increasingly important function of the Chinese Government.

The Chinese are firm in the determination to industrialize their country. Power in the world today depends upon technical know-how and facilities and they intend to acquire the tools of technology as quickly as possible. Since they are convinced that only by Government planning and close direction of all economic activities will they achieve this objective, there is little reason for assuming that the plans will bear no weight in affecting future development. Industrial education will require time and the lack of sufficient capital may slow up the rate at which they move ahead to reach

their established goals, but it will not deter the Chinese from attempting to tighten government controls and proceed "according to plan."

HOW CHINA WILL PAY FOR INDUSTRIALIZATION

The initial capital for China's economic rehabilitation, pending the grant of loans for that purpose, will come from assistance from UNRRA, Chinese funds on deposit in banks abroad and in China, and unused credits available from wartime loans. If reparations are obtained from Japan, they will constitute another source of initial capital. Certainly the industrial enterprises recovered in areas formerly occupied by the Japanese will bolster China's shattered industrial resources. It is expected that a considerable portion of the 600 million dollars which UNRRA planned to spend for China's relief and rehabilitation will be available for industrial reconstruction. A minimum of three hundred million dollars is on deposit in American banks alone. Adding in unused credits which may approximate 400 million dollars, China should have at her disposal in 1946-47, at least a billion dollars for rehabilitation expenditures.

This amount will give China the essential funds for reconstructing her industrial and transportation facilities and for making initial purchases of heavy machinery and equipment for new industrial enterprises. A more extensive industrial program will require additional funds which China will attempt to secure on loan from foreign governments, from private sources, and from the International Bank. Her success in obtaining such loans will largely depend upon the attainment of political stability in China and on the understanding which will be reached on commercial matters affecting foreign nationals. These loans will be mainly project credits, granted for financing specific undertakings.

China's wartime loans were mainly of the commodity type, based on the importation and exportation of specific commodities such as tung oil, tin and tungsten. Of the 670 million dollars borrowed from the United States, many of the loans were repaid two and a half years before maturity date and none are in default. This is also true of the 274 million dollars borrowed from Great Britain.

The continuation of undeclared civil war held up the grant of major credits to China. No action had yet been taken late in 1946 on a project loan of 560 million dollars requested from the Export-Import Bank of Washington to finance the first year expenses of a two-billion dollar industrial and transportation program. The only post-war credits approved in 1946 were a 33 million dollar loan for the purchase of raw cotton in the United States and another credit of approximately the same amount for the purchase of ships and industrial equipment. Canada, which anticipates a large post-war trade with China, early in 1946 granted her a loan of sixty million dollars.

In judging China's ability to finance an industrialization program and repay the loans which will be required for industrial expenditures, the political situation is more baffling than the financial. If civil war can be terminated, a satisfactory agreement reached with the Soviet Union in regard to Manchuria, and political stability assured for some time to come, China should have no difficulty in repaying her financial obligations. This is contingent, of course, on peaceful conditions throughout the world, particularly in the Far East, and on general world prosperity.

From the financial point of view, China should progress steadily to a position of greater security as her foreign trade increases and capital formation grows with the expansion of industry. Although it may take time to regain her prewar export trade, within a few years it should far surpass prewar levels. So long as the United States can maintain even its present high national income and great demand for goods, markets here for Chinese exports will in general be far greater than before the war. As other countries restore their economic systems, they too will make larger demands.

Just as fast as China can restore export movements and again produce goods of commercial quality, they should meet eager markets. This is particularly true of goods like tung oil or silk which are in great demand because of our existing housing and clothing shortages. These two commodities were one-seventh of prewar exports, while tin, tungsten, tea, bristles, egg products, wool, oil seeds and embroidery were also important export commodities. While eventually silk, bristles and cotton may run into competition from synthetics or production elsewhere, export market opportunities as a whole are greater than ever before.

Improvement in the quality of products, in standardization, grading, packaging and shipping will be an important factor in increasing the demand for Chinese exports. Standardization of novelty items and handicrafts of all kinds should make it possible for China to capture a large part of Japan's far-flung markets in this field. The combination of Chinese craftsmanship and artistry with planning of design to conform to the tastes and needs of foreign consumers should open new markets to the Chinese throughout the world.

Industrialization will also help to pay its way by stimulating trilateral trade in the Pacific. China can repay for her capital goods purchases in the United States not only by direct export, but also by exports to other countries. She should be able to supply many of the Pacific areas with the products of her light industries while they furnish the United States with raw materials. The extent to which Indian industrialization and the restoration of non-war Japanese industries make them more effective exporters of industrial products than the Chinese remains to be seen.

Regardless of the extent to which China succeeds in expanding her ex-

port trade there will certainly be no decrease for a long time in the excess of imports over exports. China's potential capacity for absorbing goods is enormous. A five-year industrialization program will be only a first step in stimulating and developing her ability to produce. As her productivity increases it will be matched by her capacity for absorbing more goods. Although 450 million new customers on the American standard may remain an elusive objective for untold years ahead, many Chinese, if present plans are carried through, will enjoy for the first time the fruits of the age of technology.²

² A wide variety of published and unpublished materials were consulted in preparing this chapter. The following references were selected because of their broad coverage:

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THE SOUTHERN HEMISPHERE DOMINIONS

CHAPTER XVI

AUSTRALIA

by E. RONALD WALKER

Judged by prewar international trade statistics, Australia might be considered as an agricultural country, exchanging raw materials and foodstuffs for manufactured imports. Analysis of the occupations of the population, however, suggests that Australia was already, before the war, no less industrialized than many older countries, such as Germany. In 1933, the latest census year, a third of Australian "breadwinners" were to be found in her factories and constructional industries, and only one-fifth on her farms and sheep or cattle "stations." Of the present total population of $7\frac{1}{4}$ million, nearly half lives in the capital cities of the six States that comprise the Commonwealth. Even the city dwellers agree that "the man on the land is the real Australian"; yet the development of "secondary industries" has long been the dominant note in the policy of Commonwealth and State Governments alike.

Before federation, the colony of Victoria was protectionist, and New South Wales favored comparatively free trade. One effect of federation was to establish a free trade area over the whole continent; but the Commonwealth itself made increasing use of the tariff to encourage the growth of many manufactures that might otherwise have made little headway against the competition of imports. The protectionist movement was strengthened by the war of 1914-18, and by the heavy immigration of the twenties, which required an expansion of employment opportunities. A famous report on *The Australian Tariff*, published by five economists in 1929, propounded the view that without a policy of protection it would not have been possible to absorb so large an increase in the population at so high a standard of living as had in fact been achieved. The world depression of the thirties, characterized by a disproportionate decline in the prices of Australia's exports as compared with imports, necessitated considerable replacement of imports by local production, to regain equilibrium in the balance of payments; and this adjustment was facilitated by increased import duties as well as by exchange depreciation and cost reductions. From 1919 to 1939 the value of output from Australian factories practically doubled.

It is a mistake to attribute this development of manufactures primarily to the policy of protection. Many secondary industries would have been established under free trade or low tariffs; others, that owed their start to protection, could undoubtedly now survive a general reduction of trade barriers. As soon as the steel industry reached the stage of beginning to export at competitive prices, one could expect a corresponding development of steel-using industries in Australia. Many "infant" industries had reached a degree of maturity that was obscured by the protection of other industries, which raised the cost of materials and labor in general. The task assigned to infant industries under the traditional theory, namely, that of developing to a stage where they can stand on their own feet without any protection, is a much greater undertaking in an economy where protection is the rule than in a predominantly free trade economy. The Australian tariff contains a great deal of "water" in the sense that duties imposed to assist particular industries often produce a need for protection of other industries which find their costs thereby raised.

The most striking evidence of this tendency is the growth of protective devices and direct financial assistance for primary industries. Bounties have been provided for wine exports and cotton production; wheat growers have received relief as well as sharing in Commonwealth grants for debt adjustment; sugar, butter and dried fruits have enjoyed special home-market prices considerably in excess of their export prices. Over the years, the opposition of farmers to the policy of protection, as applied to secondary industries, has tended to be replaced by an insistence upon "protection all round." Wool remained an almost unique exception to the general trend.

In so far as home consumption prices for foodstuffs were reflected in a higher cost-of-living index number, wages were adjusted; and manufacturing costs generally tended to rise, thereby creating a need for additional protection. It is practically impossible, therefore, to determine what proportion of Australian industrialization before the war was artificial, in the sense that it did not reflect Australia's comparative advantage in different types of production. One can only note that the growth of population and the dissemination of modern technique in an environment well endowed with minerals tend to reduce the advantages of specialization in agricultural pursuits, particularly in a world which has progressively placed a lower exchange value on primary produce than on manufactured goods. Protection in these circumstances may merely accelerate the "natural" course of development, although with clumsy emphasis on those industries that can muster the most influential lobby. An important by-product is the growth of technical self-confidence, due to the knowledge that industries have established themselves despite the presence of foreign opposition, and leading to a national aspiration for further "progress" towards industrial self-sufficiency.

Wartime Industrialization

The achievements of Australian secondary industries during the war provide the most complete vindication of the traditional policy of protection. In World War I, Australian troops had to be equipped largely by Great Britain. Australian factories supplied uniforms, boots, small arms and some explosives; but there were only six government factories employing no more than 2,500 persons, and little call was made on private industry except for boots and uniforms. The Government arranged for 6,000 skilled workers to go to England to work in munitions factories; but undoubtedly Australia's main economic contribution in that war was through the supply of raw materials and foodstuffs. In World War II, on the other hand, Australia was thrown largely on her own resources for many types of weapons and matériel, and was able to contribute relatively large supplies to the common war effort of the United Nations. The consequent industrial development was of an altogether different significance from that which took place in World War I, except for the initial development of iron and steel that was of basic importance to the great growth of engineering and metal manufactures in the between-wars period, which in turn provided a foundation for much of the munitions production of World War II.

Australia's war manufactures ranged this time from all types of small arms, including machine guns, to field artillery and anti-aircraft guns complete with predictors; from ammunition for all these to bombs, grenades, mines and torpedoes; from armored cars to earth-moving machinery; from optical instruments to radio equipment of almost every kind. By early 1944, over 2,500 aircraft had been produced, ranging from elementary trainers to Beaufighters. Airplane engines for some of these were still being imported, but local manufacture was considerable and expanding. Australian shipyards, while concentrating on repairs, also turned out destroyers, minesweepers, coastal freighters, boom vessels, motor patrol boats and landing craft. The number of machine tools manufactures had increased from 3 in 1939 to 100 in 1943. Production of textiles other than blankets increased by 25 per cent over prewar; blanket production was trebled. And so on. Although the quantities in some cases were small, the variety of Australian manufactures indicates a relatively mature industrial economy, with a sound base of steel, several non-ferrous metals and chemicals.

In some instances costs were very high; Australia was forced into local production by her urgent need and the unavailability of supplies from overseas. In some cases, however, Australian costs were much lower than the prices of similar articles produced in the established centers of industry. Australian shell steel cost £11 per ton, little more than half the British price in Australian currency. The armor plate on Australian armored cars

cost only one-sixth of the overseas equivalent. These instances are presumably exceptional, but it is officially claimed that many other items produced in Australia were at least no dearer than their British or American counterparts.

One reason for the surprisingly low cost of certain items was the fact that Australian manufacturers were already accustomed to improvising with materials and equipment. Forced to do without many components that are currently available in the great industrial countries, they have often achieved ingenious simplifications in design and construction, with considerable incidental savings in cost. Achievement has sometimes led to excessive ambition, as in the project for the manufacture of an Australian combat tank, which the Government persisted with in the face of numerous technical difficulties until at last it learned that even the United Kingdom had decided to concentrate further production in the United States. A decision to build the Lancaster four-engined bomber in Australia appeared similarly to be an assertion of technical virtuosity rather than an economical use of the nation's limited resources, within the framework of the Allied war effort. On the whole, however, the attempt to achieve what appeared to lie beyond Australia's powers undoubtedly enhanced them, and extended the frontiers of practicability.

The Role of Government

Private enterprise was ready to accept the lion's share of the credit for these achievements. Not only were many of the "miracles of production" undertaken in private factories and government annexes attached thereto, but, in addition, the actual direction of the Departments of Munitions and of Supply and Shipping was largely in the hands of businessmen, many of whom served the Government in an honorary capacity while retaining their own commercial interests in the industries they were governing. The Director-General of Munitions and Aircraft Production throughout the most critical years of the war was Mr. Essington Lewis, managing director of the Broken Hill Proprietary Company, Limited; and his authority under National Security Regulations was inevitably supplemented, if not overshadowed, by the dominant position that his company and its affiliates enjoyed in Australian heavy industry. Without help of this kind, no government could have pushed wartime industrial development so far; and it was significant that when the Labor Party seized the reins of government, towards the end of 1941, very few of the businessmen bureaucrats nominated by the preceding Government were frozen out. After Pearl Harbor many more businessmen were appointed, and received liberal delegations of the emergency wartime powers wielded by the Ministers in charge of the production and procurement agencies.

Despite the contribution of private enterprise to wartime industrializa-

tion in personnel and actual production, the role of government was nevertheless fundamental. Indeed, there is too little recognition of the extent to which private industry depended on government assistance for finance, technical advice, and the securing of labor and materials. Moreover, the output from government factories was considerable. By mid-1943 there were 49 Commonwealth Government munitions factories, representing an investment of £55 million; and 178 government-financed annexes in private firms and public utilities, costing about £20 million. In addition, the Munitions Department owned machine tools valued at £20 million, which were largely leased to private firms engaged on war contracts. The total value of factory land, buildings, plant and machinery in the Commonwealth in 1942-43 was £345 million, of which the Government's investments in munitions (including aircraft construction) constituted about 27 per cent. According to the Secretary of the Munitions Department (Mr. J. K. Jensen), these government factories, especially those already established prior to the war, were the senior partners in various technical matters. "They do all the miscellaneous jobs, leaving it to the specially built war factories and annexes to produce spectacular output in the way of mass production. For example, where a shell annex will be equipped to manufacture only one type of shell and for large output, the Ordnance Factory will be undertaking concurrently a considerable number of different types. . . . It will be to the government factory, therefore, that the annex management or the contractor will refer for technical and manufacturing information." Moreover, the government munitions laboratories, employing over 1,000 scientists, were "the nerve center for the whole munitions organization."

But the mobilization of private industry was nevertheless the key to production on the scale required for total war; and the Government's guidance of and assistance to private industry were even more significant than its operation of factories and laboratories. This assistance ranged from the financing of extensions of private factories to the controlled allocation of materials; from the provision of machine tools to the training and direction of skilled labor. Above all, the Government provided an assured market for the goods in question, and placed restrictions on those types of production that were considered unessential in wartime. These various wartime controls were substantially similar to those imposed in Great Britain and the United States in the course of conversion and the expansion of war industries; but in Australia they had even greater significance as impulses towards further industrialization.

The Government controlled every source of capital for investment. All capital issues and loans on mortgage (above a small sum), and sales of real estate were subject to the approval of the Treasury; and stock market ceiling prices prevented any considerable trading in industrial shares. Bank

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advances were subject to supervision through the Commonwealth Bank, which issued instructions to the trading banks as to the types of loans that should be approved. Self-financing out of profits was not subject to direct control, but profits were limited by price control and heavy corporation taxes. With these several controls, the flow of investible funds could be channeled into those industrial developments that the Government desired to encourage. If finance was still lacking for essential developments, the Government might either make a direct advance from the Treasury (especially for a capital extension required purely for war purposes) or guarantee a bank loan.

All building activity was subject to permit from the Department of War Organization of Industry, and priorities were granted for particularly urgent factory construction. Much new machinery was produced under the direction of the Munitions Department (Machine Tools Directorate) and leased to firms engaged on war work. Machinery was also imported from the United States under Lend-Lease; in 1943 this constituted about one-sixth of the total value of machinery placed in industry by the Machine Tools Directorate. Production of materials was similarly planned by the Government. In 1943 the Munitions Department alone held a stockpile valued at £35 million. Supplies were distributed mostly under an allocation system based on that operating in the United Kingdom.

The labor employed in factories increased from 549,000 in 1939 to 753,000 in 1943, and there was also a striking redistribution of the labor already engaged in manufactures before the war. The Government played a most active part in expanding the effective labor force and in developing the necessary skills. To facilitate an increased utilization of female labor, special wage fixing machinery was set up, and systematic steps were taken to provide appropriate welfare facilities. A huge industrial training scheme was developed by the Commonwealth Government in collaboration with the State technical education systems, and the Government paid living allowances to trainees as well as meeting the costs of instruction. Many unessential manufactures were prohibited outright; and this measure, together with the greater difficulty of securing exemption from military service for employees in low priority industries, added to the flow of labor into those manufactures that the Government desired to expand most rapidly. Finally in January 1943, a "labor draft" was introduced, by conferring on the Manpower Directorate "powers of direction" over both males and females. In the following 18 months, 10,000 persons were directed to particular places of employment; and the knowledge that compulsion could be applied undoubtedly led many workers voluntarily to accept war jobs without much regard to their own personal wishes.

In addition to these controls over finance, plant, materials and labor, the Government was able to provide what is so often lacking in peacetime,

namely an assured market at a satisfactory price. Since many orders were inevitably placed with firms that had no previous experience in the manufacture of the articles required, contracts were often let on a "cost-plus-profit" basis.

Against all this Government initiative and facilitation must be set the difficulties inherent in bureaucratic regulation of private enterprise; and many manufacturers will carry into the post-war years a more vivid recollection of the delays and inconveniences caused by Government than of the extent to which industry's own performance was dependent upon Government assistance. Consequently, many Australian manufacturers may be overconfident as to what can be achieved by unaided private enterprise in the face of foreign competition, which was lacking during the war.

Wartime Agriculture

Australia's industrial development during the war reflected the wartime change in the relative significance from the national viewpoint of primary production for export, and of manufactures. Inevitably the achievements of secondary industries were to some extent "at the cost of agriculture." Gross enlistments in the forces amounted to one male out of every four. The rural labor force was reduced by at least one-fifth; and the Japanese capture of Nauru caused a serious shortage of fertilizers. Unfavorable weather also reduced output, as mentioned later. In the fifth year of the war the total area of all crops harvested was only 16 million acres, as compared with 23.5 million in 1938-39. Wheat acreage had been halved; fodder crops, barley, sugar cane and cotton all declined; only vegetables, flax and rice were expanded considerably, in response to special war demands. Meat production increased slightly; but there was a decline in the number of cows milked and dairy production as a whole was seriously reduced, though some items such as cheese and preserved milk were expanded. The wool clip was maintained at a level higher than prewar.

In the earlier stages of the war, the main problem from the viewpoint of the rural industries was to dispose of their produce, and government measures related mostly to acquisition schemes in connection with United Kingdom contracts, or were designed to assist industries such as the apples and pears industries which had lost their oversea markets. With the extension of the war into the Pacific, however, Australia was called on to supply food for the United States forces under Lend-Lease, in addition to contributing to the needs of the United Kingdom. As the problem of deficiencies displaced the problem of surpluses, Australia found that her military and industrial war effort had already drawn so heavily on her rural manpower resources that the rapid restoration of production in some industries, such as dairying, was impracticable. After several years of low rainfall, in 1944-45 a severe drought caused a tragic fall in all rural pro-

duction, especially in livestock, at the very moment when strenuous efforts were being made to regain some of the ground that had been lost in the first five years of the war.

The wartime agricultural situation is, therefore, the other side of the medal to which many manufacturers, intent upon holding the ground gained by secondary industries during the war, pay insufficient attention. As will be shown later on, the rehabilitation of agriculture to its prewar status would imply narrower limits for post-war manufacturing development than is generally recognized.

Post-war Planning

Australia established fairly elaborate machinery during the war for post-war planning. Under the Minister for Post-war Reconstruction (Hon. J. B. Chifley, and subsequently, from February 1945, Hon. J. J. Dedman) there were several Commissions and Committees, including the Rural Reconstruction Commission and the Secondary Industries Commission. The former presented a series of reports reviewing the probable post-war problems of agriculture, and was purely an advisory body. But the Secondary Industries Commission operated rather differently. It established a number of panels to investigate the problems of individual manufacturing industries, and it reported to the Government on particular projects including the manufacture of motor vehicles. Perhaps its main function was to advise on the post-war disposition of government munition factories, and in this connection, far from merely making general recommendations on the general policy that should be followed, the Commission undertook negotiations with various firms that were interested in securing particular factories.

There was an inevitable tendency to consider the problems of the secondary industries in isolation from those of the primary industries. The outstanding exception to this tendency was the interest taken by the Secondary Industries Commission in the problems confronting the wool industry as a whole. Although the United Kingdom Government had contracted to purchase the export surplus of raw wool during the war and one clip after the war, it was generally recognized that the challenge of synthetic fibers, which had been temporarily subdued during the war, would be increasingly aggressive in the post-war period. World production of staple fiber had increased from 4 per cent of the total output of textile fibers in 1932, to 20 per cent in 1943; the production in that year was about 4,000,000,000 pounds, nearly twice the world production of scoured wool. It was largely on the initiative of the Textiles Panel of the Secondary Industries Commission that the Government decided, in 1944, to inaugurate a comprehensive program of research and publicity. The research program was to cover every stage of the industry, from the development of pastures and

sheep breeding to the manufacture of textile fabrics; the physical and other qualities of wool and its competitors; and economic problems of manufacture and marketing. This consideration of the wool industry "as a whole" marks a significant attempt to establish a community of interest between primary producers and manufacturers in an important sector of the national economy; and the same approach might be applied to other raw materials produced and processed in Australia. But when we view the national economy as a whole, further industrialization and the expansion or the retention of agriculture on its present scale appear, subject to certain qualifications, as alternative lines of development.

The most obvious qualification is that primary and secondary industries might both expand, if the population were increasing rapidly enough. On the basis of recent fertility rates, Australia's population would stabilize at no more than 8 million; a figure that seems absurd against the demographic pattern of the Pacific area. There has been much talk, therefore, of the need for the renewal of immigration into Australia after the war, not only for defense reasons, but also in the interests of industrial development. Over the period 1921-30, immigration was at an average annual rate of a little over one-half per cent of the population. A considerably heavier rate of immigration would be needed to effect any rapid change in Australia's population prospects. It is impossible at this stage to predict whether the social changes wrought by the war will initiate mass movements of population such as would be required to double Australia's population within a generation.

The Rural Reconstruction Commission gave some consideration to the extent to which an increase in population would provide a home market for agriculture produce and simplify the problem of disposing of Australia's primary products. The Commission estimated that an increase in population of one million would require the services of less than 25,000 men to produce all the rural commodities needed for their consumption. This is another way of saying that unless there is a considerable expansion of export markets, increase of population implies greater industrialization. Given elastic export markets, a rapidly expanding population would permit concurrent growth of both primary and secondary industries.

Another factor that might allow expansion in both agricultural production for export and in manufactures, even if the population is stable, is technical progress in agriculture. Australian agriculture is already relatively economical in its use of manpower; but a widespread rise in efficiency so that more farmers attained the level of the best modern practice would bring a considerable increase in the productivity of agricultural labor.

The experience of the war years in this general connection is difficult to evaluate. While it is true that the expansion of war manufactures was accompanied by a contraction of most types of rural production, this might

be attributed more to the withdrawal of labor into the Services, and the shortage of fertilizer, than to the actual diversion of resources from primary to secondary industries. On the other hand, the workers who remained in agriculture were strained to the utmost, and an abnormal intensity of labor was maintained over an extended period in all branches of industry.

One feature of the war economy that helped to alleviate the conflict between industrialization and maintenance of agriculture was the attainment of full employment. The Government has now formally adopted full employment as "a fundamental aim" in post-war plans; and the extent to which it is successful in achieving that aim will enlarge the limits within which industrialization can be pushed without causing a contraction of agriculture. On the other hand, in so far as the measures adopted to promote full employment should produce an increase in costs of production in primary industries, the latter would suffer a check.

Australian Version of the Full Employment Thesis

Australian representatives have advocated the adoption of full employment as a post-war objective of the United Nations at almost every international meeting, from the Food Conference at Hot Springs to the International Labor Conference at Philadelphia; from Bretton Woods to San Francisco. Following several pronouncements on behalf of the Government endorsing this objective the Government issued a White Paper on "Full Employment in Australia" early in May 1945, setting out the main lines of the policy which the Government proposed to follow. Coming as it did in the wake of the United Kingdom "White Paper on Employment Policy" (May 1944), the Canadian Government paper on "Employment and Income" (April 1945), and the Murray-Wagner-Thomas Bill introduced in the United States Congress in January 1945, the Australian White Paper did not leave any great impression of novelty. In spirit it is closer to the Murray-Wagner-Thomas Bill than to the British White Paper, for it is directed towards full employment rather than the mere avoidance of cyclical fluctuations. On the other hand, it lays less stress on the preservation of "free competitive enterprise and investment of private capital," and more on "collaboration between governments, employees, and trade unions" than does the Murray-Wagner-Thomas Bill. The general method proposed to attain full employment is to keep "public expenditure high enough to stimulate private spending to the point where the two will provide a demand for the total production of which the economy is capable when it is fully employed"; in short, the method advocated by Sir William Beveridge in his book, *Full Employment in a Free Society*.

The most original part of the Australian full employment thesis was the Government's insistence, from 1942 on, that the adoption by the major

nations of a policy of full employment was the key to international economic collaboration and a necessary antecedent to any real progress in the reduction of trade barriers and the stabilization of foreign exchanges by international agreement. In announcing the signature of a Mutual Aid Agreement with Canada, in 1943, the Minister for External Affairs (Dr. H. V. Evatt) gave the following resumé of the Australian Government's views on international economic collaboration.

"Australia favors an international agreement by which subscribing countries would bind themselves to pursue domestic policies aimed at full employment, and would arrange for an existing organization, such as the International Labor Office, or a new international organization, to facilitate the exchange of information and consultation between countries on employment policy, and generally to give effect to the international agreement on employment.

"In the immediate post-war period, in which the economic policies of all countries will still be unsettled, Australia would advocate and support such forms of international economic collaboration as should make it unnecessary for countries to adopt policies of extreme economic nationalism.

"As a part of a long-range policy, every effort should be made to obtain, as a permanent feature of international economic relations, a maximum degree of collaboration. This may have to be achieved gradually, and as the transition problems are overcome. In the first instance, limited agreements should be sought which would provide at least for regular consultation between nations.

"It will be essential that countries which are not fully developed, or which are highly dependent on a narrow range of exports, should be able under any international agreement to use such economic measures as may from time to time prove necessary to ensure continued stability. The need for these measures will decrease to the extent that international collaboration proves successful. Further, such countries must reserve power to develop and diversify their industries.

"The Australian Government is of the opinion that it is reasonable to expect that all international agreements on economic collaboration should take into special account the industrial development, the dislocations, and the accumulated needs resulting from the prolonged diversion from peacetime production, in countries like Australia, which have been engaged for a long period in an actual, sustained, and total war effort."

Australia's sustained campaign for full employment overseas may have yielded little of a concrete nature, but it undoubtedly served to focus attention upon the international importance of employment policy, and secured the introduction into each of the major international economic agreements, and even into the United Nations Charter, of appropriate references to the promotion of "high" or "full" employment, which help to give such documents a rather different flavor from that of the agreements following the first World War.

This emphasis on employment reflects in part the fact that Australia had a Labor Government throughout the period of the Pacific war. Aus-

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tralian Labor has strong and bitter memories of the mass unemployment of the Depression. Although the Depression made its first impact on the incomes of primary producers, and many farmers suffered heavy losses, the enforced idleness of some 30 per cent of the industrial labor force was the most dramatic feature of the Depression years. It is inevitable, therefore, that the full employment thesis should reinforce the other factors favoring concentration on the post-war retention and expansion of manufactures established during the war. Australia is "employment conscious" to a greater extent than she is "real income conscious."

Other Factors in the Industrialization Policy

Apart from the belief, which was already well established before the war, that manufactures can absorb more people into employment than can rural industries, there are a number of other reasons why Australians think of future economic development largely in terms of manufactures. If there is any conclusion to be drawn from the war, it is the overwhelming importance of the industrial basis of defense. While the invention of the atomic bomb will require a complete reassessment of the role of armies and navies in any future struggle, there is no doubt that the strength of a country, whether in isolation or, more important, as a member of an alliance or a regional security system, depends primarily upon its manufacturing industries. It is possible that the fate of small countries such as Australia will turn entirely upon the success achieved by the great industrial powers in avoiding conflict on the one hand, and preserving order among secondary powers on the other. But until the world picture becomes clearer, a country such as Australia will inevitably employ every method at her disposal of ensuring that she is industrially strong. And if, as appears not unlikely, world security is to be achieved through domination by the great powers, while the smaller countries are relegated to a position in which they wield little influence, even collectively, Australia will probably seek the greatest possible degree of economic self-sufficiency, in order that in time of crisis her internal affairs may depend less upon the good will of other countries.

Another factor operating in the same direction has already been noted, namely, the growth of a national pride in technical achievement. Although it might be argued that excellence in rural pursuits is as worthy an ambition as mechanical virtuosity, the whole pattern of modern civilization is so dominated by industrial ideals that Australians will resent any suggestion that they should be modest in their pretensions and aspirations in the field of manufactures.

At the same time there has developed a more pessimistic assessment of the prospects of the rural industries, which contrasts oddly with the general assumption that land settlement will be an important avenue for the

re-establishment of servicemen in civilian life. The reports of the Rural Reconstruction Commission present such an array of difficult problems to be solved that anybody familiar with the inertia of the politico-administrative machine must gain an impression of very difficult days ahead. "It will be a major blunder," said the Commission in its *First Report*, "if Australian Governments launch schemes of agricultural expansion at the end of the present war without a realistic view of the chances which the new production so induced has of finding a place on the markets of the world." In its *Third Report*, the Commission stressed the following additional obstacles to any marked expansion of farming:

"Erosion is already reaching alarming proportions in some districts; there is every reason to believe that its development will be accelerated unless far more active steps are taken than at present. Soil fertility has already reached a low ebb in many areas and the number of these areas is increasing. Some systems of land tenure now in vogue encourage poor standards of farming. Rural amenities are often inadequate and compare so unfavorably with urban standards that the drift to the cities will continue until they are improved. Rural education is in many instances quite incapable of giving the training which boys and girls on farms need if they are to be efficient farm workers and farm home-builders. The danger that plans may be put into operation for the opportunist exploitation of our already sadly depleted timber resources is very real. Some much discussed projects for the allocation of Australia's somewhat meager water resources may easily cause embarrassment in a few decades. These are not alarmist statements; they are the facts of the situation and are amply borne out by irrefutable evidence."

The Commission's *Fourth Report*, dealing with the economic position of individual farms, finds that "there are in Australia many farms that are financially unsatisfactory and do not give the farmers concerned a reasonable livelihood"; and recommends the establishment of a national system of "Settlement Reconstruction Authorities," to consolidate and extend the work of farm relief, debt adjustment and re-arrangement of holdings, already undertaken to a varying extent by State Government agencies with some Commonwealth assistance. Rightly or wrongly, discussions of the future of agriculture betray an apprehensiveness contrasting sharply with the confidence that characterizes discussions of manufacturing development. This has been reflected in the care with which the Federal and State Governments are approaching the implementation of their war-service land settlement policies. Economic opportunity and soundness of the actual proposals in the light of soils, climate and conservative price expectation are the guiding principles rather than numbers of applicants for farms. The proposals from the States must receive the approval of the Commonwealth Government, whose examination is based on these principles.

The Labor Government has been supported by a considerable proportion of the farming population, and has given much attention to the situation

ment of a workable farm policy. Nevertheless, it naturally looks to the industrial worker for its principal support, and offers regular, even "full," employment as the greatest service a peacetime government can render him. The Australian Labor Party is closely linked with the trade union movement, which is naturally strongest in manufacturing industries. This industrial wing of the Party favors a considerable degree of government control over industry; and the implementation of such a policy would be easier in a more highly industrialized, self-sufficient economy, than in one that is still so dependent upon export markets.

Prospects of Further Successful Industrialization

It is one thing to set out along the path of greater self-sufficiency by the expansion of manufactures; but the practicability of achievement depends on many factors as well as the national will. The first and most fundamental question is the extent to which such a policy will run counter to the "natural" development of the country. It is true that the growth of population and the maturing of technical competency have tended to reduce the comparative advantage to be gained by concentrating upon the production of raw materials and foodstuffs for export. But the advantage of producing for export or for home consumption turns largely upon the terms of trade—the relative prices of raw materials and foodstuffs as compared with manufactured goods in the world's markets. As we have noted, the recent trend has been such as to accelerate Australia's industrialization and to discourage her from putting great hopes in export production. But what will be the future trend? Mr. Colin Clark, in his book, *The Economics of 1960*, predicts that the terms of trade will swing so much in favor of primary production that Australia would gain greatly by specializing to an even greater extent in rural industries than she does today. The main basis of this forecast is the expectation that the productivity of American industry will continue to increase, while China and Japan will be industrialized, thereby augmenting the supply of manufactured goods and the demand for raw materials. Mr. Clark posits a historical parallel in the industrialization of England and France between the beginning of the 18th century and the first half of the 19th; in which period the terms of trade moved substantially in favor of primary production. The implications of such a movement in the next fifteen years would include, according to Mr. Clark's reckoning, a decline in the percentage of the Australian population employed in both primary and secondary industries and a great increase in the percentage employed in "tertiary" production (services). The decline forecast in primary production reflects mainly the anticipated increase in productivity; but also some decline in exports, because a relatively small quantity of exports will buy a large quantity of imported manufactures. Manufactures, Mr. Clark suggests, will shrink to those that are suited to a

relatively small, local market. "Tertiary" production expands as incomes rise; and since most services must be locally produced, labor must be diverted from those industries whose products can be readily imported (manufactures).

This line of argument has important implications for any primary producing country that is bent upon a policy of increasing post-war industrialization. Persistence with such a policy in the face of profitable trading conditions would involve sacrificing the increment of real income that greater reliance upon trade would bring. On the whole, however, it seems unlikely that events will follow the course predicted.

In the first place, Mr. Clark's assumptions regarding the speed of industrialization of the Far East appear over-optimistic; and at the same time, much of the increasing productivity of American industry tends to be absorbed or offset by product differentiation and other costs of monopolistic competition. But even if the terms of trade move as Mr. Clark suggests, the reaction of a country such as Australia will not be determined purely by a calculation of relative prices. If the predicted change comes primarily in the form of a decline in the prices of manufactured goods in world markets, this will be interpreted as a threat to Australian industries, and steps will be taken, in the interests of employment, to check the flood of cheap imports. If the predicted change appears instead as a boom in export prices, the Australian Government might well prefer to build up the international currency reserves of the central bank, and even to repatriate some of the overseas debt (as was done on a small scale towards the end of the war) rather than allow an expansion of imports to follow the export boom. Such a policy of caution would commend itself especially in view of Australia's past experience, in which every such boom has been followed by a business recession, and exchange difficulties, when export prices receded again. Even a considerable improvement in the terms of trade, therefore, might not have much effect upon the degree of self-sufficiency sought by Australia; provided the policy was successful from other viewpoints.

Perhaps the greatest danger to the success of a policy of further industrialization is associated with the choice of industries to be developed. The Government recognizes the theoretical need to distinguish between industries that are and those that are not suited to Australian conditions. The late Prime Minister (Mr. Curtin) told a manufacturers' conference, in February 1945, that:

"The Government intends to adhere to the policy of adequately protecting industries which are reasonably assured of sound opportunities of success, which assist the diversification of our economy, contribute to employment, and the raising of living standards of the community. At the same time, Australia must play her part in promoting world trade and improving economic relations. Our policy must be consistent with our

international obligations. . . . Some industries have grown up in special circumstances during the war with excessively high costs. It would be wasteful and unreasonable to seek to maintain all industries of this type."

The following passage from the *White Paper on Full Employment in Australia* (May 1945) makes further acknowledgment of the importance of "selective protection."

"While the tariff and other methods of protection are legitimate devices for building up industries appropriate to our economy, the grant of protection by the Government to producers is a privilege which carries with it the responsibility for maintaining the highest possible level of efficiency. Protection must not be protection of excessive costs, inefficient methods and obsolete equipment, nor should it encourage the practice of relying on rings, cartels, tariffs and a guaranteed home market, rather than on efficient production. Protection in the past has been granted upon the advice of the Tariff Board, and the Government proposes to continue to rely upon this body. The Tariff Board has ample powers to investigate and report upon the efficiency of protected industries. It is the Government's intention that the Board shall carry out these investigations and make regular reports."

The application of these general principles to particular cases will be more important, however, than their mere enunciation. Already the Government has announced that it desires to encourage the development of automobile manufacture in Australia, following investigations by the Secondary Industries Commission. There is already an established body building industry, and during the war various engines were manufactured, from airplane engines to heavy Diesel engines. The Secondary Industries Commission considered there were good prospects of the demand being adequate to ensure economic manufacture; and several firms, including General Motors and the Nuffield organization, had expressed the intention of developing manufacture in Australia. The previous Government had decided to grant a monopoly to a single firm, in order to ensure a market that would justify mass production; but the Labor Government decided to throw open the industry to all comers. The total prewar demand for cars in Australia was about 50,000 per annum, a figure well below the scale of output considered necessary in America to manufacture a low-priced car. Even if the post-war market should be materially larger, it would seem very optimistic to expect two or three firms to share so small a market, except as part of a wider arrangement for the international division of markets which might permit some exportation from the Australian plants to countries near Australia rather than from America and England. The experiment will be watched with great interest by the trade.

The relative smallness of the Australian home market is a factor affecting the practicability of developing many lines of mass production without

tariffs or other protection. Growth of population has been an important stimulus to manufacturing for this reason, and if post-war immigration is on a large scale, the prospects of further industrial self-sufficiency will be increased accordingly.

The critical size of the market, from this point of view, cannot be determined in advance, because it depends upon the number of firms that invade it. Earlier consideration of automobile manufacture in Australia was based largely on the assumption that the market was adequate only for a single firm, concentrating on a single main type of vehicle, in contrast with the wide range of automobiles available through importation. As the market for any commodity expands beyond the critical size for a single firm, however, there may be an inducement for competitors to enter the field; and it is quite possible for particular industries to be badly over-capitalized relative to a limited home market. During the war, when it was essential to conserve labor, materials and every type of productive resources, all new manufactures were subject to permit, and it was the policy of the Department of War Organization of Industry to refuse permits for new undertakings that duplicated existing facilities, if the latter were adequate for the wartime needs of the community. A similar policy was followed by the Capital Issues Committee and other agencies exercising some control over new enterprises. This was advantageous to the firms already established in an industry, and it was significant that many of the nationalization schemes suggested by industries to the Department of War Organization of Industry proposed restrictions upon the entry of new firms. However, price control and corporation taxes checked the exploitation of such monopolistic positions as were established under war controls. As the end of the war approached, speculation was rife as to whether freedom of entry would be permitted after the war, especially during the transition stage when firms that had been engaged on war work would still be in the throes of reconversion. As a post-war policy, however, regulation of entry would have presented many difficulties; especially the determination of whether existing facilities were "adequate" for peacetime needs, the selection of new entrants from among the several applicants, and the avoidance of monopolistic exploitation of the consumer, and possibly of the employee. Moreover, the Commonwealth's legislative powers under the Federal Constitution in peacetime could hardly be extended to cover such action. The Government accordingly decided against any attempt to continue restrictions upon entry after the war.

An Export Trade in Manufactures

Another method of overcoming the limitations of the domestic market is to seek a wider market by exportation. Australia exported some manufactures to New Zealand and the Pacific Islands before the war, but this

trade was insignificant as compared with the traditional staples of wool, wheat, dairy products, meat, fruit and minerals. Over-all, manufactures did not exceed 6.5 per cent of the value of exports. During the war, however, Australia filled large orders for munitions and supplies, including textiles and footwear and various fabricated goods, for the Eastern Group Supply Council centered in New Delhi, and for the United Kingdom. As the period of rehabilitation loomed ahead, purchasing missions on behalf of the Dutch East Indies and the British Colonial Office began to explore Australia's resources as a supplier of relief and reconstruction requirements. Australia, in common with the other United Nations, made a contribution to UNRRA, and provided a surprisingly large share of it in the form not only of wool and foodstuffs (the drought of 1944 and heavy United Kingdom and U.S. Army requirements left little food for relief purposes) but of textiles and other manufactures.

During the critical years 1942 and 1943, the Government, as a matter of policy, refused permission for commercial exports of manufactures, for it was necessary to concentrate all resources upon the war, and since the exportation of goods was equivalent to the exportation of manpower, only those exports that contributed directly to the Allied war effort could be allowed. In 1944, however, a beginning was made to liberalize the administration of this policy, because it was considered that Australia's manufacturing industries were in danger of suffering a competitive disadvantage vis-à-vis some of her Allies, owing to Australia's exclusive concentration upon the war effort, even to the disregard of post-war markets. Accordingly a small allocation of labor was made for the initiation and development of commercial exports, and the Secondary Industries Commission actively encouraged manufacturers to think in terms of export markets, especially in adjacent countries such as India and the Dutch East Indies. Enthusiasm for the exportation of manufactures was sometimes associated with a crude presupposition that the primary industries were losing their markets and that Australia must look to manufactures to maintain her export trade. Just why Australia should maintain her export trade at a high level if she could be self-sufficient in both primary and secondary production was not clear. The desire for a considerable export trade in manufactures is largely a reflection of the difficulties ahead of mass production industries for which the Australian market is uncomfortably narrow, and of the technological self-confidence born of industry's wartime achievements. There may well be great expansion of manufactured exports as compared with prewar, particularly since Australia can now sell steel in the United Kingdom market. But the total value of such a trade will long continue to be small as compared with the exports of the traditional staples. Nevertheless, any development of such additional manufacturing for export will facilitate the absorption of redundant workers from agriculture.

International Issues

Although the trend of Australian policy implies a willingness to withdraw to some extent from the world economy, the implementation of this policy will be largely influenced by factors external to Australia.

In the first place, the strength of protectionist sentiment owes much to the political instability of the modern world. The war appeared to justify amply the policy of protection for manufactures, and even the so-called "excesses" of protection turned out to be less foolish from a defense viewpoint than from that of conventional economic analysis. As Australia looks out upon the world scene, neither the United Nations Charter nor the atomic bomb encourages extravagant hopes for the security of small nations. After her narrow escape from being invaded in 1943, Australia will not lightly give up any of the military potential that she has gained through industrial development. Whether she will ever have to face aggression unaided, or can rely upon the assistance of great powers or other members of a security system to maintain peace in the Pacific; there are good grounds for believing that her own safety will be enhanced by industrial strength. If world security becomes an established fact instead of an uneasy aspiration—in other words, if the great powers can agree among themselves—the impulse to Australian self-sufficiency will be to that extent weakened.

But Australia also has to fear world economic instability. The type of economy she had developed prior to the depression was doubly vulnerable to external economic crises. A disproportionate fall in the prices of foodstuffs and raw materials as compared with manufactured goods, or an interruption to the international flow of capital investment, was always apt to throw the Australian economy into depression; and when both were combined, as in 1890 and 1930, Australia suffered grievous economic harm through forces beyond her control. In Australia as in New Zealand there has been much interest in recent years in the technique of "insulating" a "dependent" economy against such external shocks. Since the depression Australia had virtually abandoned the importation of capital, but the annual service of the existing external debt remained a comparatively rigid item in the balance of payments that still might enhance such difficulties as would be imposed by a collapse in export prices. The development of Australian manufactures in replacement of imports reduces Australia's dependence on world prices, in so far as the availability of manufactured goods becomes less dependent upon the buying power of Australia's exports. One potent factor supporting Australian protectionism is the fact that the United States and other great economic powers may not succeed in stabilizing their own economies, and that their recurring economic difficulties would impose new shocks upon the Australian economy if it were based primarily on international trade. At the same time, the real cost of protecting Australian manufactures against world competition depends largely upon the price relation-

ships established between raw materials and manufactured goods in the world at large. The more successful the great powers are in solving their own economic problems, the better chance there is of Australia's industrial development following the lines indicated as profitable by the international price mechanism, rather than those determined by a desire to withdraw from an unstable world. Naturally, there will always be sources of instability within the Australian economy, but they may be more easily controlled in the absence of external shocks.

Australia looks out upon the world economy in three main directions: towards the United Kingdom, towards the United States and towards the Far East. Her strongest economic ties are with Britain, whose capital developed her land and trade, and who provided the natural markets for all her staples, especially in their earlier periods of development. The development of Australian manufacturing has inevitably reduced the complementary relationship of the Australian and British economies, and tended to reduce the economic links between them. However, there have been other powerful forces operating to reinforce these ties; and to check the growing diffusion of Australia's trade relations that was apparent before the depression. The overwhelming strength of the dollar facilitated the development of the sterling bloc of countries facing common currency problems; and political and sentimental factors combined to clear the channels of trade within the Empire, while raising the barriers to trade with the rest of the world. The war has apparently strengthened rather than weakened these tendencies, despite the interlude of mutual aid with the United States.

Australia, in common with other relatively undeveloped regions, was a natural market for the goods which American mass-production methods could turn out more cheaply than British industries. But the American and Australian economies were never structurally complementary, and were even in some degree competitive. The attitude of Australian manufacturers towards the United States has been a natural blend of admiration and suspicion; admiration and some imitation of production methods, and suspicion lest American interests seek to dominate sections of Australian industry. The war has aroused a mutual interest in each other under the aegis of Lend-Lease. But the development of closer relations in the post-war period will depend largely upon the settlement of Britain's financial problems vis-à-vis the United States, since Britain's dollar trouble is almost equally Australia's.

From a purely geographical viewpoint, one would expect Australia's trade with the Far East to expand steadily; though here, again, political factors complicate economic developments. The more rapid the industrialization of Japan and China, the more profitable it would be for Australia to concentrate upon raw materials and bulk foodstuffs. The trend towards Australian self-sufficiency and the attempt to build up an export trade in

manufactures would seem particularly anomalous against the background of the Pacific basis, if the future holds peace and progress for the great populations of Asia. If the outlook is one of turmoil, however, Australia's trade relations with the Far East will be based on power politics rather than economic collaboration.

CHAPTER XVII

UNION OF SOUTH AFRICA

by I. EDITH COOKE

I. EFFECT OF WORLD WARS ON UNION'S ECONOMY

The Union of South Africa as such was formed in 1910, so that its economy is only some 35 years old. Up to the time of union it had been engaged mainly in pastoral and agricultural pursuits; industrially it had been occupied in gold and diamond mining almost exclusively since their discovery some fifty years previously, and in a minimum number of small essential industries filling the needs of a predominantly agricultural economy.

World War I saw a tremendous expansion in the Union of South Africa's industrial activity owing to the curtailment of shipping and the engrossment of Europe, Britain and America in manufacturing war goods so that South Africa had to turn to its own industry to provide essential supplies it had previously imported.

"In 1917-18 the number of manufacturing establishments in South Africa was 5,918, employing slightly under 15,000 whites and 84,000 non-Europeans (Natives and Colored), the value of the gross output of these factories being £60,000,000 (about \$250,000,000). By 1938-39 the number of establishments had grown to 10,256, employing 144,838 whites and 207,662 non-Europeans and with a gross output value at £199,617,000 (about \$800,000,000). The latest official report on the distribution of the Union's working population shows a total of 741,576 workers in South Africa."¹

In World War II the shipping and supply problem was even more acute than in the first World War. South Africa's needs from overseas had been increased in the intervening years and, although industry had continued to grow steadily during those years, the curtailment of her imports made deep inroads into essential civilian supplies and goods for the manufacture of munitions and war supplies on her own account so that industry received a tremendous impetus and really came into its own, cramming about a quarter of a century's progress into three or four years.

¹ *SOUTH AFRICA AT WAR* (Compiled by South Africa Public Relations and Information Office, New York.)

Industry

This has been a war of production largely necessitating engineering skill and equipment; resources of this nature at the disposal of the Union at the beginning of the war in 1939 were limited to repair shops belonging to the railways or mines or commercial engineering works. None of them were on a mass production basis; very few of them had developed repetitive machining operations and those that had were not necessarily available for actual war production as they were engaged on the production of things such as rock drill spares for the gold mines, both to the extent of prewar needs and in increased numbers because of their being less available from overseas.

South Africa had imported the bulk of her household appliances from overseas; she had no motorcar industry outside of an assembly plant working with parts imported from overseas with some small amount of body-fabrication locally; bicycles and motorcycles were also imported from overseas. There was no machine tool industry; the State-owned South African Iron and Steel Corporation produced a limited range of steel in comparatively small quantities, suitable to South Africa's small demand for locally-manufactured steel. There was one Small Arms Ammunition Factory run in conjunction with the South African Mint in Pretoria.

In the transportation field South Africa has never been well off. She has no inland waterways; her roads are fair depending on the weather conditions; she has no commercial trucking industry. This was killed by rigid application of legislation enacted during World War I (against ox-wagons originally!) because trucks would have competed too strenuously with the state-run railways, which are her main source of transportation.

One thing the Union did have, however, was a pretty well developed explosives industry supplying the gold mines, one such factory being the largest of its kind in the world.

South Africa is rich in raw materials; she has an adequate supply of iron ore, a large part of which is haematite ore of great purity running 65-67 per cent metallic iron; also limestone, dolomite, manganese ore, chrome ore, copper ore, asbestos, fluorspar, barytes, corundum, gypsum, tungsten, diamonds, tin ore. Cheaply mined coal is one of her greatest assets and this is used to produce electricity to power the mines and industries generally.

Gold production is the pivot more or less upon which South African economy turns, with over half of the Government revenue coming directly or indirectly from gold mines. Consequently it was felt essential to maintain gold output during the war at the same high level as before. South African workshops therefore had the double job of turning out needed parts for the mines operations as well as for the munitions program.

The Union had no merchant fleet except a small fishing and whaling fleet nor had it anything approaching ship repair facilities.

In the labor field South Africa, with only a small reservoir of skilled

workers, was at a disadvantage even before the war began. This was further aggravated by the fact that many of the workers had joined up and been sent overseas before they could be screened for essential skilled work in the Union.

Agriculture

The Union of South Africa, after the last war, in common with a number of other nations attempted to become agriculturally self-sufficient. Tariff protection was given to weaker branches of farming to overcome the natural restrictions to their greater productivity, but this worked to the detriment of the stronger branches of farming, particularly livestock. Furthermore, in the Union farming is inclined to be haphazard, unscientific, and non-mechanized generally. It has not yet been stabilized and present policy has resulted in the lowering of soil fertility, the deterioration of natural grazing, lower moisture content of soil and aggravation of the already bad soil erosion problem.

Production of wool, hides and skins, fruit and vegetables follow the natural agricultural bent of the country. South Africa further had a fair canning industry and boot and shoe industry which were expanded to meet its own civilian and army needs exclusively. In the case of canning and food production it also revictualled ships and convoys calling at its ports and supplied large amounts of food to the Middle East.

South Africa also had the nucleus of a clothing industry and this was expanded to take care of producing uniforms and all kinds of supplemental uniform needs from imported yarn.

A Supplies Board was set up under the leadership of Dr. H. J. van der Bijl. With the aid of committees and panels of experts and skilled people in the various fields this Board co-ordinated the meager resources along with the one or two good ones and expanded, designed, built and improvised new ones to make up a formidable war industry which soon began producing a steady flow of war and civilian goods, in some cases rivaling the impossible. For instance a large heat-treatment plant for gun barrels was planned, designed, built and in operation within nine weeks from the day the draughtsmen first put pencil to paper. In the absence of and the subsequent delay in obtaining automatic shell-finishing plants from overseas, South Africa had to make and adapt hundreds of locally manufactured single-purpose lathes to do this work.

By dint of great ingenuity and resourcefulness, the setting up of a training scheme for turning out skilled workers and semi-skilled workers including women and negroes, and the increasing use of South African materials and what components could be obtained from overseas, a substantial amount of goods were turned out by South African industry in the war years. An interesting fact is that in the field where it had the least resources

to start with the Union made the most amazing contribution, i.e., that of motor vehicles.

"In those dark and anxious days," General Smuts has written, "when the Afrika Korps pressed dangerously close to the vital link at Suez, the products of this country saved many thousands of tons of shipping the long, perilous voyage through the Atlantic. . . . The value of South Africa's industrial contribution to the United war effort can never be fully computed."²

2. SUMMARY OF SOUTH AFRICAN INDUSTRIAL WAR EFFORT

In November, 1944, the Director General of Supplies announced in his Bulletin that up to then the Union had produced 50,000 tons of shells and shell cases; 28,000 tons of mortar bombs, grenades and landmines; 20,000 tons of small arms ammunition; 70,000 tons of high explosive bombs; over 6,000,000 pairs of army boots; over 4,500,000 blankets; and 1,400,000 steel helmets.

Also produced were over 5,700 armored fighting vehicles and in addition 35,000 motor vehicles which helped to equip the "Steel Commandos" of the Springboks when they began their victorious advance into Italian East Africa. The tire-making factories have turned out 60 different types of tires to total nearly 1,000,000 for use by the armed forces. In the way of structural steel, the fabricating yards in the Union made component sections of a very large number of airplane hangars of different types, and two types of bridges. These were shipped in the flat to be erected on site. Such bridges and hangars entailed the use of 60,000 tons of steel.

Gun sights, mortar sights and optical instruments also were made in considerable quantity, and 100 sets of special purpose radio equipment were shipped in the form of complete stations. These did excellent service in many theaters of war, including the Pacific.

The demand for engineering stores, mainly for the Eastern Group armies, imposed a very heavy burden on South African workshops and on sources of war materials, both ferrous and non-ferrous. Large outputs included stone-crushers, rock-drills, heavy chains, steel wire rope, a great variety of pumps and valves, water purification plants, water and steam piping, electrical conductors and wire, electric motors, transformers, switchboards, traveling cranes, donkey boilers, sterilizing plant for hospitals, and a great variety of small goods as well as welding rods and industrial gases for various uses. Miscellaneous production for the Eastern Group included large numbers of mess tins, water bottles and sundry rubber articles which include hose, rubber belting and air-rescue dinghies.

Textile factories turned out 14,000,000 garments during the war. In addition 64,000 tents and nearly 2,000,000 yards of waterproof canvas for various covers were made; kit-bags delivered exceed half-a-million and

² *South Africa*, June 16, 1945, page 405.

ground sheets top 200,000; thirty-nine thousand ambulance stretchers were made, as well as 257,000 bedsteads and 251,000 mattresses.

All this direct war production engaged upwards of 60,000 workers operating in 600 factories, in addition to those continuing to produce civilian goods. The value of machine tools specially imported for war production during the period under review approximated £1,000,000 and, in addition, a very large number of single-purpose machine tools were manufactured in the Union for munition and general stores programs.³

"Food production for the armies, the convoys and the British public has been on a scale which is reflected in some of last year's figures: jam and marmalade 125,000,000 lbs.; canned fruit 40,000,000 lbs.; canned vegetables 55,000,000 lbs.; canned fish, sausage or milk 50,000,000 lbs."⁴

"Engineering problems never before tackled in South Africa have been solved during the last four years in Durban. Ship repairs that strained resources and ingenuity to the utmost have been successfully undertaken and factories and machine shops more than 400 miles from the sea worked directly on ship repair work.

"Since March, 1941, more than 5,700 craft, merchant and naval, have been handled. They ranged from the 44,000-ton 'Ile de France' to 200-ton coasters among merchantmen, and from the battleship H.M.S. 'Nelson' to minesweepers. The number of skilled artisans, electricians, welders, fitters, carpenters, riveters, etc., increased from less than a hundred to more than 1,500.

"Repairs ranged from little more than routine maintenance work to virtual reconstruction and high precision work for damaged parts, often without any previous experience with the work required. The 'Ile de France' was the largest ship ever drydocked in a Union port, where her thirty-two boilers were completely retubed with South African manufactured boiler tubes. An American ship with turbine reduction gears was stripped and supplied with new wheels cut by a Benoni firm. More than a year later she called in at Durban and reported complete satisfaction with the work. For the 'Tropic Star' heavy castings and forgings were made in Durban. The steel for the piston rods came from heavy sugar roller shafts and were forged by the railway workshops.

"The total cost of repairs to ships of all classes carried out in Durban cannot be accurately computed, but it is authoritatively considered to run into several million pounds. The steel alone required to repair one torpedoed ship cost about £50,000."⁵

Three sound national developments have evolved from the war effort; first the development of a machine tool industry which will form the basis

³ Director-General of Supplies, Bulletin No. 10, November 1944.

⁴ *South Africa*, June 16, 1945, page 405

⁵ *The African World*, June 30, 1945

for the starting of a second one, namely, a substantial heavy-plant-and-machinery and railway-rolling-stock industry. Thirdly the establishment of an infant shipbuilding industry for the production of small vessels for the Union's shipping and coastal trade with the rest of Southern Africa.

3. PROBLEMS PECULIAR TO SOUTH AFRICAN ECONOMY

The problems facing greater industrialization in the Union had long been recognized and sporadically dealt with but it took the emergency of the war situation to highlight them into sufficient prominence to precipitate action. However, only the surface was scratched in the solution of them and the following major problems face the long-term economic planning of an industrial future for South Africa embracing the highest standard of living for all of her total population comprising 2,000,000 Europeans, 6,600,000 Negro or Native (Bantu), 200,000 Asiatic and 800,000 Coloreds (Mulattoes).⁶

Race Labor Problems

Among the problems South Africa has in common with other nations is the question of importation of East Indians into the Natal area with the resultant problems (brought upon South Africans by themselves) of labor competition of low living standards. In that the labor was originally imported as an economic venture the problem stems from the same source as that of the American Negro but the economic consequences are different. It is also similar in many respects to the Oriental problem on the West Coast of the United States. The one cardinal point in common might be said to be the nature of the recriminations on all sides and the extreme difficulty of separating economic theory from prejudice.

South Africa's Wasting Asset—Gold Mines

The whole of South Africa's prewar industry was built around the gold mines. They were the mainstay of her industrial development. However, it is now becoming more emphatically apparent that something has to be done to keep the goose that lays the golden eggs in some fit state of health to go on producing eggs until the secondary industries have at least passed the gosling stage. So South Africa's number one problem is to keep the gold mines operating in such a way that this wasting asset will be used to the best advantage of the country as a whole. Given no new developments in other areas and no deeper-level mining development the experts predict that production will begin to decline rapidly within about ten years. If new areas are opened up or deeper-level mining is economically possible this would only postpone for a few years the inevitable decline in production.

⁶ *Official Year Book of Union of South Africa, 1941, page 988.*

High Industrial Cost Structure

Secondly the high industrial cost structure which has resulted from inefficient non-mechanized and haphazard development in industry and the "civilized" labor policy whereby industry uses less non-European labor than either mining or agriculture, will have to be reduced in order to lessen the need for protection of infant industries by the Government and to enable the industries to be more self-supporting and in a position to compete with overseas trade.

Labor Situation

Thirdly the labor situation and wage structure will have to be completely revised to include the non-Europeans. Up to now any suggestion that non-Europeans be trained as semi-skilled workers or put into a situation where there was a possibility of their competing with the Europeans has been prevented by the State and labor unions and public opinion generally.

General Problems

In addition to these three problems peculiar to social structure South Africa has many problems in common with most other countries whether poorly or well developed industrially. These can generally be attributed to the changing trend toward equality of opportunity, better distribution of income and purchasing power, and better food and living conditions.

Specifically South Africa needs to rationalize its industries to utilize natural resources to their best advantage. It must ensure that government protection of industries is not enabling inefficient industries to flourish at the expense of the efficient. It must see that present classification of skilled labor categories and of apprenticeship conditions be revised to conform to changing conditions of amount of skill and training required for particular jobs (i.e., where machinetending has taken the place of craftsmanship the apprenticeship and training system will have to be modified to make them compatible with the changing conditions).

In most cases South African skilled labor enjoys wages 4 to 8 times that of unskilled labor; some prewar skilled European wages in certain South African trades were the highest in the world, as shown by the Tariff Commission enquiry. In the greater number of cases the difference today between the amount of skill required for various skilled-unskilled jobs is certainly not a ratio of 8 to 1. It is thus necessary for South Africa to hold present skilled wages where they are and attempt to bring unskilled wages more into line.

The war period has shown the efficacy of having training facilities for the turning out of semi-skilled and skilled labor; in the interests of making the best use of her labor resources South Africa must work out a training scheme compatible with peacetime industrial conditions to carry on the good work.

done during the war in this respect. The State must also encourage a larger and more effective use in industry of unskilled and semi-skilled workers.

Again with a view to the optimum utilization of her natural resources South Africa needs to eliminate the kinks in her transport services. The variable rainfall gives rise to highly erratic traffic. This in turn results in the use of rolling stock and open track mileage considerably below capacity causing a high level of railway transport costs. Further, South Africa's raw material producing and best farming country is mainly in the eastern section; and the lucrative freight traffic is thus centered in one particular part of the country. The long hauls to the coast necessary for the exportable but bulky and unrefined raw materials make high transportation costs the rule rather than the exception. Add to this the fact that she has no trucking industry and the transportation problems become manifest.

Finally, as a country with a color bar and plenty of cheap labor South Africa has fallen heir to overtrading and a costly and inefficient system of distribution of her products. It is considered beneath the dignity of the average white South African to carry parcels or packages of any kind; as a matter of fact the male of the species can hardly be persuaded to carry his own baby in the street at times, never mind a package. Consequently everything is delivered, mostly by non-European boys on bicycles but also by delivery-vans operated usually by a non-European. Duplication, inefficiency and lack of organization in commerce has resulted in a high distributive margin adding to the high cost structure of the economy. Lack of standardization in manufacturing also adds to distribution costs.

It is not unusual to hear a South African say of himself and his fellows that if only they had less sunshine and more gray days they might be more disposed to work instead of working for the minimum potential while enjoying to the maximum the things that nature, in the way of climate, has given them.

Agriculture

The Union, according to a United States soil expert, has an even worse problem of soil erosion than the United States. The soils generally lack phosphates; with the winter droughts they are apt to become pulverized; the loose topsoil is then washed away in many cases by torrential rains in the summer. Owing to the poor farming methods of the negroes and Europeans the soil is further impoverished. Finally, although there are large parts which are not too dry they are stony and unfit for cultivation.

Today successful-crop cultivation in the Union covers less than 6 per cent of its total area as a result of temperature, lack of moisture, and inadequacy of the soil; at the most possibly 2,000,000 acres are irrigable, or about 15 per cent of the Union. Agriculturally the largest part of the Union is suited to livestock farming but this type of farming requires a wasteful pasture

basis because of the difficulties experienced producing enough grain as feed-stuffs for animal husbandry.

Farming in the Union is inefficient and poorly mechanized in comparison with other countries at the present time, resulting in high costs of production, low productivity and subsequent impelled aid from the Government. The Industrial and Agricultural Requirements Commission in its *Third Interim Report* published in 1941 has this to say of the productivity of the Agricultural Community:

"When casual farm labor and non-European farming are taken into account, almost two-thirds of the Union's population engaged in farming are found to produce only one-eighth of the national income . . . the residual population permanently dependent upon farming and the number of casual farm laborers, are therefore far in excess of the proportion warranted by the unimpressive contribution of this industry to the national income."

Forestry

Afforestation in South Africa is very poor; her indigenous trees are mostly of the acacia variety, which is not usable for much more than firewood. This lack of afforestation is probably one of the contributing factors to the farming difficulties. Attempts have been made to plant forests for timber for use as mine props and for building purposes but a good deal needs to be done to produce enough timber for the basis of a stable and economic saw-mill industry as well as an extended plywood industry. There are supplies of wattle trees in the east, the bark of which is used for tanning purposes, and South Africa is now trying to develop a pressed woods industry from the by-products and waste products of this industry. To date also she has not made adequate use of what other forest by-products she has been able to produce such as resin turpentine and eucalyptus oil.

Fishing

Again the story is one of waste of natural resources and poor and haphazard methods. Most of the industry has been carried on by coloreds and other individuals in small groups with inefficient tools and boats and with an almost total lack of knowledge of scientific methods or of the potentialities and possibilities of this industry.

Base Mineral Development

Following the general trend of a young and industrially poorly developed country South Africa has exported raw materials and imported the finished or manufactured articles. This has contributed to the high railway rates and uneconomic use of possibly one of her most valuable natural re-

⁷ Industrial and Agricultural Requirements Commission, *Third Interim Report*, 1941, page 23, par. 61.

sources, base minerals. There is a definite need for an expansion of this industry in order to provide the raw materials for the heavy industries she intends to establish and for the production of a higher grade of ore and reduction to a semi-manufactured product at the place of mining for export overseas or transport to the base for the heavy industries.

One of the factors impeding the progress of economic development in South Africa has been the largely inaccurate belief that she has such a small domestic market for her goods that it is uneconomic for her to start up various industries. Forgotten is the fact that South Africa does not necessarily lack a domestic market but that she has not gone the right way about developing it. This maldirection has resulted in the present parlous position of the low-income groups where, as a result of the unequal income distribution, of their low purchasing power and consequent lack of an adequate diet and proper housing, they are in many cases not able to contribute as much as they should, even to unskilled work if it were provided for them.

Therefore the problem resolves itself into providing adequate employment for them in unskilled and semi-skilled fields, paying them higher wages and thus increasing their purchasing power, helping provide housing subsidized by the government if necessary, and supplying better nutrition facilities from export surpluses.

Last but not least, in line with all other countries it is necessary in South Africa to have a unified plan for the economic and social development of the country as a whole in order to make the best use of scarce means; it would be desirable for the state to take into account the total population and to endeavor by public investment in slack private investment periods to maintain a stabilized economy.

4. PROSPECTS OF POST-WAR ERA

W. K. Hancock in his *Empire in a Changing World* says: "All our talk about freedom from want will turn out a sham unless we endeavor to spread this freedom amongst the classes or races who need it most; yet we may find our endeavors in conflict with deep-seated prejudices or fears. Within the British Empire, South Africa offers the most striking example of this conflict. In South Africa it is the non-European sections of the population who have the greatest need. But will the European section admit this need? Americans know well enough from their own experience how easy it is for economic fear to entangle itself with racial feeling: how easy it is for white men to look upon black men as dangerous competitors for work and wage rather than as partners in a common economic task. White men in South Africa have hedged themselves about with exclusive privileges; they have regarded the economic and social advance of the unprivileged races as a threat to their own welfare and status. . . .

"But not all white men. A valiant minority has always fought for a more

rational and humane concept. It has demanded justice for the weak. It has also appealed with cogent argument to the self-interest of the dominant race. The color bar in industry means low productivity and a low national income. South Africa remains a poor country, and poverty is no respecter of race. Bantu poverty creates poor whites. Bantu prosperity, on the other hand, would mean a growing market within South Africa's own doors. These are some of the things which South African liberals have been saying over and over again. . . . In recent years business men and even the Chambers of Commerce have begun to say them. And now they are being said by spokesmen of the South African Government. In September 1941, the Minister of Education and Finance declared at Pretoria: "The Government desires a better life for all the people, and when we say "the people" we mean the whole people, not just the European section but all the sections of the people."

"In January 1942 General Smuts spoke in the same spirit at Cape Town. He declared that segregation had failed, he recognized the rapid urbanization and industrialization of the native population, he proclaimed the urgency of raising the standards of native health and housing, education and wages and nutrition. He appealed for a 'holiday to all the old ideas that have brought nothing but division and strife to this country.'"

These words were translated into action to some extent by the establishment of an Industrial and Agricultural Requirements Commission for a setting out of the "Fundamentals of Economic Policy in the Union." Out of its concrete factual investigations and recommendations have come the following developments which augur well for the economic progress and social welfare of the "whole people, not just the European section but all the sections of the people."

Land

The Union is making a beginning from the ground up and endeavoring to tackle its soil erosion problem, putting into practice the advice given it by Dr. Bennett from the United States on the subject of soil erosion. Specifically this advice is to do whatever is possible at once without waiting for large-scale soil reclaiming projects. A scheme is already afoot to train staff to go out into the field and work with the European and Bantu farmer in an endeavor to overtake the long start gained by the forces of soil erosion.

Comprehensive planning is being set up and an effort made to co-ordinate the efforts of all the various Marketing Boards under the National Marketing Council so that one section is not subsidized or helped at the expense of another and so that the agricultural activities for which South Africa is best suited, i.e., pastoral farming and fruit and vegetable growing, are carried on with grain production as an auxiliary to animal husbandry.

⁸ W. K. Hancock, *Empire in a Changing World*, page 132.

On the subject of feedstuffs, an attempt is also being made to provide a commercial feed made from soybean, maize and some of the by-products of the fishing and other industries. This supplemental feed should go a long way to avoiding the loss of thousands of livestock every year from drought and lack of pasture necessitating subsidies and assistance from the Government.

A negative way in which the agricultural resources can be aided is by further migration of natives from overcrowded conditions on farms to the towns where they can be absorbed in industry. Two prime results would be a higher per capita production as well as reclamation of land from erosion.

Labor

As a result of the migratory tendencies of the native in the past an artificial scarcity of labor for the mines and for industry has been created. In other words the natives from the farms or reserves drift into the towns or are recruited for the mines and work in industry or domestic service for six months or a year; then having saved up anything from £10 to £75 they return to the farms or reserves. Here they acquire a piece of ground or settle on the family ground, buy a cow, a sheep and a pig—as much as they can afford. Part of this livestock is then paid in “lobolo” to a negro’s parents-in-law for a wife and he settles down for a while. After repeating the process a couple of times he finally ends up with several scrub livestock and two or three wives. At last he goes back to the farm and sits in the sun. Naturally his wives do all the work around the place including the tilling of the field.

Recently a Central South African Regional Development Association has been set up to attempt to influence more industrial expansion in the large central part of the country and away from the eastern section where 77 per cent of the Union’s industrial development and 80 per cent of gross value of industrial output have been concentrated in 2.6 per cent of the country’s area.

This fact can have a direct bearing on attempts to get a native to want to work all the year around by South Africa’s diversifying her industries and, where practicable, by putting them in heavily native-populated areas. In this fashion the industry will go to the native in his natural environment and he will be induced to become part of the industrialization and civilization instead of remaining a floating element, vacillating from farm to town to the detriment of the country’s economy. This will ensure a permanent industrial technique and labor force and will avoid the loss of skills acquired in sporadic short periods of working.

Education will play an important role in the negro’s becoming part of this industrialization. By the word “education” here it is not meant to conjure up a program of eight years of formal elementary school followed by four years of high school and possibly even a degree. Such an education would place the native in a position of having aped the white man’s educa-

tion without the ability to share the economic situation of the white. Such a system only serves to frustrate his own ends and those of his own people.

The education of the negro should be on the basis of everyday realities, including the three R's possibly, with health, nutrition and a vocational subject in Basic English. This education should be on as large and rapid a scale as possible. There are after all millions of adolescents and young adults who have never been to school but who have another thirty years or so in which time they will be required to be absorbed into the general industrial progress and the more scientific farming that is being planned now.

During the war, experiments were made in connection with utilization of native labor in industry. By training him in methods of machine operation on a narrow range of processes it was found that the native is highly adaptable and suitable to this type of repetitive process operation. This offers scope in the future particularly from the point of view of reducing costs.

It has been suggested too that the Aptitude Tests Section which was set up for psychological testing during the war be utilized as an Institution in collaboration with the Witwatersrand University to carry out psychological and aptitude tests. This, though more imminently valuable as applied to Europeans in South Africa, would also be usefully applied to the native labor force in making them more efficient, concomitantly reducing costs to their employers.

In regard to the European labor situation the Cott training scheme, inaugurated and used very successfully during the war period, has shown that South Africa's apprenticeship system is outmoded and that intensive pre-training is infinitely valuable. South Africa is therefore adapting and extending this scheme to include returned servicemen and others now going into trades.

Industry

In assessing the potentialities of South Africa industrially one way of expressing it would be to state the potential needs of the country. Roughly these could be said to be 2,000,000 houses, the same number of stoves, refrigerators, possibly twice as many beds and other everyday amenities, clothing, education and nutrition for approximately 7,000,000 people who still live in mud huts, wear blankets and go barefoot. The crux of the whole matter is of course getting the negro to want to live in a house; to desire and be in a position to pay for what we call civilized amenities. Here again his education and the strategic placing of industry will play an important part. To repeat; "Bantu poverty creates poor whites. Bantu prosperity, on the other hand, would mean a growing market within South Africa's own doors."

The above figures do not include what will be required by the other 3,000,000 people, whose requirements will be on a similar basis as those of

other countries more industrially developed. However, the requirements or ability to purchase the requirements will still be somewhat behind until South Africa's cost structure is rearranged.

The establishment of a Social and Economic Planning Council to co-ordinate and formulate national policies toward the social and economic development of South Africa is an important step towards the supplying of the demand and the means of obtaining purchasing power to create demand.

The State has always taken a very definite hand in the economic affairs of the Union. At the turn of the century it stepped in to take over and expand the meager existing railway service. Neither the Provinces nor commercial enterprise had been able to take care of the necessary expansion in the transportation industry to keep pace with the rapid industrial development catapulted into being by the discovery and working of the gold mines.

Because of the Union's dependence economically on the gold mines it was generally felt that she should concentrate on developing that part of her economy and leave investment in secondary industry alone. In short, import her requirements and pay for them from gold receipts. It was generally considered that with her limited market South Africa could not run secondary industries profitably or economically. Then the Government realized that the gold mines were a wasting asset and that the country needed a more long-run productive industrial economy; a steel industry was started. We now see that it has played anything but the white elephant role in the war effort and as a result of the expansion made during the war promises to be a very steady foundation for the other heavy industries that are being built up around it.

The State also has established the Electricity Supply Commission for the generation of electricity. Not only does industry derive much of its power from this source, but also a materially larger percentage of the residences of Europeans use electric stoves, water heaters, etc., than is the case in the parallel segment of U.S. economy.

The latest body set up by the Government to help industrial development is the South African Industrial Development Corporation, money for which has been voted by Parliament with the aim of helping existing enterprises to expand, and to promote and guide new industries into being. The last report issued by the Industrial Development Corporation showed that 46 new manufacturing industries had been assisted to the extent of £1,759,757; that private enterprise had invested £4,700,000 in the same time.

Recently it has assisted in the establishing of a woolen textile mill at Uitenhage in the Eastern Province of the Cape, and the venture is being actively supported by the wool growers of the country. This mill is the largest enterprise that has been sponsored by the Industrial Development Corporation to date; one of the main reasons being that it will use mainly South African raw materials. This development, of processing her raw

products for domestic consumption at home, instead of sending them away to be processed abroad, is a principle that the Government wants to foster.

The State has control of the postal service, the telephone and telegraph system and now is also in control of the airways which are run in conjunction with the railways and harbors. The radio is also in the hands of the Government.

South Africa has already started on the road to socialism in its national ownership of important resources. The co-operative movement has been used to advantage in agriculture and could be used still more effectively in bringing up the standard of the non-European by helping him to help himself.

A Fishery Control Board has been very recently started to control, expand and conserve South Africa's fishing potentialities, which from recent surveys are high. In fact only the fringe has so far been touched. An interesting facet is the development of a fish liver oil industry for the supply of Vitamin A and other essentials obtainable from the livers of the various fish to be found in South African waters. Few probably realize that South Africa produced one-tenth of the United Nations' requirements of Vitamin A. Almost all the liver oil produced is more potent than cod liver oil, while the oil content of South African shark livers is up to 80 per cent.

South Africa has also established a National Research Council and a Bureau of Standards which should have a beneficial effect on industry.

Five-sixths of South Africa's population simply have never had a house in our sense of the word. As a result of the shift of population from rural to urban areas the housing problem has become acute. A National Housing Committee has therefore been set up to plan for the adequate housing, from scratch as it were, of the Union's population.

As a direct result of the war the National Roads Board has come into being; it was imperative to have the best possible roads for defense purposes and South Africa has been trying to get her road mileage into good shape. Much however remains to be done here. The absence of a competitive trucking trade further tends to impede rather than spur advancement.

Capital

"In a recent survey of financial conditions in South Africa Dr. H. M. de Kock, of the South African Reserve Bank, showed that the available supply of money had expanded from less than £37,000,000 in 1932 when the Union was still dogged by the depression to nearly £300,000,000 in 1944. South Africa is fortunate in having a superabundance of means of payment; her money is backed by a large amount of gold and foreign exchange in excess for settling overseas payments as fast as the country's requirements of goods can be met by overseas suppliers. With the continuance of such

price and physical controls as are essential for as long as they are necessary, and with the pursuit of sound and sane financial policies by the Government and the banks as well as other financial institutions, there is no reason why the Union should not be able to maintain the existing situation of an inherently sound currency and avoid the price and cost structure getting out of hand. The country . . . was provided with satisfactory machinery for implementing the Government's monetary policy which at present was broadly that of maintaining parity with sterling on the one hand and stability in domestic money on the other. While sufficient local capital might not be forthcoming for all projected plans of new mining development and for industrial enterprises which entailed appreciable risk, there should be ample capital available for purposes of the Government, municipalities, public utilities and private enterprises which afforded a substantial measure of safety for investment as well as for the purpose of mortgage loans or rural or urban property."⁹

Pan-African Trade

The war has emphasized perhaps the role South Africa can play as the most industrially developed country in southern Africa. It has been importing large amounts of timber and other raw materials from the Belgian Congo, Portuguese East Africa, Southern and Northern Rhodesia and the other British colonies in east Africa. In return it has exported manufactured goods to them and there is no reason why this two-way trade should not be expanded in the future to the mutual benefit of southern Africa. In this connection the shipbuilding industry established during the war will help build up a fleet of small cargo vessels with which South Africa can implement her import-export trade with her neighbors.

Indicative of the feeling of Prime Minister Smuts in this regard is a personal message to the trade publication, *Industry and Trade of South Africa*. In it he remarked: "During the last war, South African industry witnessed over a period of four years a development that might otherwise have taken twenty years and it is my confident expectation that, with the wonderful strides that have been made in industry over recent years and the stimulus imparted by our war effort, still greater results will be demonstrable upon conclusion of the present conflict.

"The Belgian Congo, which holds in itself a considerable part of the wealth of the world, has many commodities of interest to industrial enterprise in the Union, but I am confident that producers in the Union will make every effort to demonstrate their ability to cater for the wants of our friends in the north.

"There are many problems, including those of sea freight and land

⁹ South African Bureau of Information *Newsletter*, July 31, 1945.

transport, which will require to be solved and I suggest that in view of the mutual desire to improve our trade relations with each other a meeting between the various interests will go a long way to achieve this object.

"Commerce and Industry well know that the Government is ready and anxious to give every assistance in this regard and I repeat to Commerce and Industry the exhortation given to South Africa many years ago that our hinterland is there in the north."¹⁰

South Africa is also not unmindful of the possibilities of a tourist trade after the war and has set up a Tourist Development Corporation to co-ordinate the activities of making South Africa attractive to tourists. She has the natural resources for this trade, with beautiful scenery and National Parks. An added attraction is the wild animals in their natural habitat. These may be seen from the safety of a motor car while traveling along the good roads in the Game Reserves. Hotel and traveling costs in South Africa are moderate in comparison with most other countries.

WHERE DO WE GO FROM HERE?

We have examined various aspects of the Union's economy in static tableau-form as it were. This has served in many cases to point up the weak spots. Let us now turn to the dynamic picture, the march from present to future. From this aspect much of the vitality, the optimistic signs, can be gleaned.

Very much can happen in any country which is economically and politically as young as South Africa. Its people have progressed politically, economically and materially over the past six years. They have seen how they were situated at the end of the African continent, away out on a geographic limb of the world; they have seen Europe once again in the hands of war-mongers; they have seen Europe stretching her tentacles over the African continent; they have seen their young men volunteer and take part in the bloody battles of Abyssinia, Eritrea, Egypt, the Middle East, Italy and Burma; and they have seen refugees passing through their country some to stay, some to move on. They have seen the people, the real people, the refugees who had lost all their possessions and who had suffered most, recommence their lives. They have seen crowned heads of Europe complete with the national treasuries exchange their "baubles" for good South African gold; they have learned much from watching their national and international politicians at work. They have seen the crowned heads of Europe go down like ninepins, even before Churchill prophesied they would.

As a finale to their observations they see that the era of the common man has arrived in Great Britain and that Soviet Russia instead of going into anarchy as was predicted in the 1920's has contributed in a big way to the future of the world.

¹⁰ *Industry and Trade of South Africa*, November 1940.

Humanity continues on the march. The answer to South Africa's destiny is to be found somewhere in the following:—

1. Initially the country developed as the result of its gold and diamonds. The national policy is to tax the wasting assets with a view to assisting the developing assets. As far as South Africa is concerned diamonds are no longer controlled by an international group, since the State as such has a big interest in certain diamond bearing areas and accordingly has an equal interest in the maintenance of the value of the diamonds.

Many of the gold mines in the Transvaal have reached the peak of their production and are declining slowly. The "Reef" is known however to extend from the Transvaal away down into the Orange Free State and these latter areas would have been developed during the war had it been possible to obtain the necessary mining machinery. Prospecting and the sinking of boreholes has been completed and when once mining machinery becomes available again these new properties will be opened up; in other words the center of the gold mining activity is moving towards the Orange Free State. How will this affect the industrial development of that section which is at the moment singularly undeveloped?

2. For some ten to fifteen years after the formation of the Union encouragement was given by the State to the development of a steel industry even to the extent of offering bounties, which were provided for in the annual budget, but with the exception of these being claimed in a few cases and in small amounts even this was not sufficient to arouse enough interest to start an industry.

It was common knowledge to most South Africans that all the necessities for a steel industry existed in the country and in the right places and it was equally recognized by the Hertzog Government in 1923 that the development of a steel industry was being held back by the International Steel Group. The Government therefore invited German scientists and ironmasters to make a visit and report upon the potentialities of a steel industry, with the result that shortly thereafter it was started and developed as a quasi-government organization. It continues to flourish, is expanding materially, and in the very near future will supply all but a few special types of steel that are not required in sufficient quantities to make local production worthwhile.

Around that key industry there have developed, with every encouragement from the parent company and from the Government, subsidiary industries which continue to flourish and there is every indication that they will continue to prosper. It is confidently anticipated that the development of some of these subsidiaries, privately-owned companies dependent upon the steel works for their semi-manufactured materials and established along the Vaal River, are laying down the blueprint for South Africa's Pittsburgh.

3. The railways and feeder-bus lines are State-owned and controlled but

they must by the Constitution be operated as commercial enterprises. The airways development of South Africa is being incorporated in the Transportation set-up, embracing railways, feeder-buses, possible trucking lines, a small merchant fleet and the harbors. The supply of electricity for the whole of the country is state-owned; the steel works are indirectly state controlled; the banking system of the country is in a measure comparable with that of the United States and has a Central Reserve Bank which is the issuer of the currency and which currency is backed by not less than 40 per cent gold and 60 per cent commercial paper; as the result of the war the country has found it possible not only to reflect surpluses in its national budget but to redeem almost all of its national foreign debt.

4. State "interference" in one form or another is accepted in the Union. For instance in agriculture the State set up various standards for agricultural products; in the case of the sugar belt along the coast of Natal, as the result of Government intervention, a working arrangement has been made between the planters, the millers and the consumers, as a result of which each producer is insured of a reasonable return on his investment or on his labor and the consumer is guaranteed against paying an unreasonable price for his consumption of sugar.

During the war the Government entered into bulk marketing agreements on behalf of the producers and arranged for the sale of the produce to the Government of Great Britain; however that government is now a "labor" government; the government of Soviet Russia is a "socialist" government. Will it be found necessary by the producers in South Africa to continue to market much of their produce on the basis of bulk government trading?

5. The natural hinterland, as was remarked upon by Field Marshal Smuts, is the "northern hinterland,"—the Rhodesias, Portuguese East and West Africa, the British colonies in Central Africa and Belgian and French Equatorial Africa and the indications are that the Union of South Africa is gradually becoming the provider of their needs. Can South Africa bear the same relationship industrially to the rest of southern Africa that the United States does to the rest of the Americas?

6. The European or white population as consumers consist of just over two millions whereas the Bantu or Negro population is some six and one-half to seven million. Some of the industrialists have recognized the market that exists among the Bantu consumers and are quietly developing that market, but unless the Bantu has some form of education he is not likely to be a consumer of normal European consumer goods. But is it the policy of the average South African to educate the Bantu? This "native question" was set down in 1910 with the formation of the Union as being one of the subjects that required early consideration and decision. The country how-

ever is divided in its feelings and over the period of 35 years relatively little has been done.

7. What will be the attitude of the new Labor Government of Great Britain toward the "native territories" that are situated like islands to the north and in the middle of South Africa, namely Swaziland, Basutoland and Bechuanaland? For years the South African Government has endeavored to persuade Britain to transfer the political ownership of these territories to the Union Government but every time that the subject has been raised, sometimes with considerable acrimony resulting, the British Government has stalled on the issue.

Will the Labor Government of Great Britain take a different attitude? If it does not will the time not have arrived for the younger South Africans to feel that they should take the law into their own hands? When this transfer takes place—as it must take place—and with the early anticipated admission of the Mandated Territory of South West Africa to the Union of South Africa, the country's geographical boundaries will have included in them several additional hundreds of thousands of miles and several additional hundreds of thousands of largely Bantu consumers. And then what?

8. What of South African politics? In the past political parties, with the exception of the Labor Party, have been divided on a most extraordinary and illogical basis, i.e., that of allegiance to either Field Marshal Smuts or the late General Hertzog, and one can find on either side of the Lower House or Assembly representatives of commerce, agriculture and of industry. A similar situation still exists today, but "time passes on" and with it in due course must pass that allegiance. Will not the younger men decide that the time has come for parties to be divided on the basis of common interests, i.e., that of commerce and industry on the one hand, agriculture on another and labor making up a third—and these parties replace the present ones? There are strong indications that this tendency is there and that by the time the next general election is held in 1948, unless the Government of the day goes out on a vote of "no confidence" in the meantime, it is quite likely that the parties of the future, the very near future, will be composed of young men and young women who will not be concerned with the history of the Anglo-Boer War but whose interest will be the UNION OF SOUTH AFRICA and not whether it should be pro-British or anti-British. The younger generation is tired of the old political feud and wants to get on with a United South Africa.

The foregoing are some of the issues that add to the light and shade of the country out of which there is always something new coming. These issues will come to be sorted out—and the sorting will be materially affected by developments throughout the world.

THE AMERICAS

CANADA

by H. CARL GOLDENBERG and KENNETH S. HARRIS

I. THE WAR YEARS: INDUSTRIAL EXPANSION

In the years before the war Canada was essentially a producer of primary commodities sold in world markets, although it supported extensive manufacturing industries protected by tariffs and dependent upon the domestic market. In 1939 agriculture was the leading industry in terms of size of the working force and manufacturing was second with something over half the numbers of workers employed in agriculture. The war with its unlimited demands for munitions and the consequent expansion of manufacturing capacity has changed this emphasis. The working force employed in manufacturing doubled at the same time as agricultural employment suffered a ten per cent decrease. Manufacturing therefore replaced agriculture as the leading industry in terms of the number of persons employed.

During the past five years the value of all manufactures produced in Canada has increased by about 140 per cent and the physical volume of production has almost doubled. This required a very substantial expansion in industrial capacity. To create the necessary capacity, the Dominion Government to the end of 1944 spent \$700,000,000 for the construction of war production facilities and an additional \$70,000,000 for the construction of wartime housing in connection with these facilities. It is estimated that in the same period approximately \$500,000,000 of non-government funds were spent on industrial expansion. The total of \$1,200,000,000 invested in new capacity in the past five years increased the estimated fixed capital investment in the manufacture of iron and steel products by about 166 per cent, non-ferrous metal products by about 150 per cent and chemical and allied products by about 233 per cent.

The expansion in iron and steel capacity was as follows:

CANADIAN CAPACITY—IRON AND STEEL
(in short tons)

	Prewar 1939	1944
Pig Iron (effective capacity)	800,000	1,800,000
Steel Ingots and Castings	1,600,000	3,000,000

The following table compares 1939 production with the peak war production of selected non-ferrous metals:

CANADIAN PRODUCTION—SELECTED NON-FERROUS METALS
(in short tons)

	Pre-war 1939	Wartime Peak
Aluminum (refined)	82,800	492,600
Brass (fabricated)	10,000	220,000
Magnesium	Nil	5,380
Mercury	Nil	800
Nickel (refined)	64,000	103,200

This expansion of industrial capacity, and particularly the production of aluminum to meet war requirements, called for a greatly increased use of hydroelectric power. The installed capacity of central electric stations expanded from 7.5 million horsepower in 1939 to 9.6 million horsepower in 1944.

The net value of production in manufacturing industries from 1940 through 1944 averaged two and two-third billion dollars a year as compared with an average of one and one-eighth billions a year from 1935 through 1939. This sharp increase was brought about by war demands since approximately 60 per cent of the value of Canadian industrial output during the five war years was for war purposes. Only 30 per cent of Canadian war production was for the Canadian armed forces at home and abroad while 70 per cent was produced to fill the needs of other United Nations, principally the United Kingdom and, to a lesser extent, the United States and other countries. Thus by the end of 1944 the output of Canada's manufacturing industries doubled in size as a direct result of demands for munitions of war, and almost three-quarters of this war production was for export to other countries to supplement their munitions programs.

While industrial expansion and the changed position of manufacturing relative to other industries effected major alterations in the Canadian economy, a further significant change occurred within the industrial sector of the economy. During the five war years Canadian industry was called upon to manufacture goods which formerly were either entirely or in large part imported. Shipping difficulties restricted supplies from the United Kingdom while the requirements of their own war production programs made it difficult for the United Kingdom and the United States to supply many types of end-products and components for which Canada was accustomed to rely on these countries as suppliers in the past. Consequently the war has contributed towards a more diversified and self-contained manufacturing industry in Canada.

The program for construction of war production facilities called for large numbers of machine tools; before the war Canada imported machine tools

from the United States and England but the wartime demands on machine tool manufacturers in these countries and the resultant difficulty in obtaining her requirements from these former sources of supply made it necessary to develop a machine tool industry in Canada. Before 1939, radio manufacturing in Canada consisted largely of assembling imported parts; the demands of war necessitated the development of facilities within the country for manufacturing a large proportion of the many components for signals and radar equipment. Similarly under the stimulus of war demands and facing difficulties in obtaining supplies from traditional sources, the Canadian automobile industry developed within Canada sources of supply for many components. The major development in this field was the establishment in Canada of two factories with sufficient capacity to produce almost the entire Canadian requirements of anti-friction bearings which before and during the war were imported principally from United States sources. Before 1939 the entire Canadian demand for steel sheets was supplied by United States sources; today Canadian production of sheets is increasing and will be increased further when projects now underway are completed. Similarly Canadian production of tin plate is increasing, whereas formerly it was in large part imported from the United Kingdom. Many further examples could be given of the development of sources of supply within Canada of materials and end-products which were previously imported.

"For the first time in history Canada in this war has produced synthetic rubber, mercury, magnesium ingots, tin, tungsten, chrome, concentrates, aviation gasoline, blending agents, optical glass, various chemicals and new types of plywoods, plastics, textiles, paints and lacquers. For the first time also it is making many types of complicated machine tools.

"Equally spectacular have been the advances in the production of finished products. With some minor exceptions before this war Canada was producing no defense equipment. Today the list of items, ranging from military locomotives to pistol bullets, from destroyers to lifebelts, runs to many hundreds. For the first time Canada is making artillery units, both large and small; filled, complete rounds of heavy projectiles; Lancasters, Mosquitos and other large aircraft; Algerines, frigates and other fair-size warships; radar and other intricate electrical and signals apparatus; military precision instruments, armored vehicles, super-explosives, self-propelled guns and a wide range of other equipments, components and supplies.

"Of war products useful to the civilian are a Canadian-developed 'dry' ammonium nitrate fertilizer, new types of dehydrated foods, surgical and dental instruments, telescopes and other optical instruments, sulfa drugs, penicillin and hundreds of other new items formerly imported."¹

¹ *Canada at War*, No. 44. Feb.-March 1945, p. 28.

More spectacular and of far reaching importance was the disclosure with the dropping of the first atomic bomb that, possessing one of the world's two most important deposits of uranium, near Great Bear Lake in the Northwest Territories, Canada was able to enter as a pioneer into the vast new field of technology arising from the controlled release of atomic energy. Ample supplies of basic materials, good water supplies and isolated sites well suited to the work made Canada a factor of major importance in the production of the first atomic bombs. The peacetime potentialities of atomic energy as a source of industrial power and as an aid in scientific research and in medicine are enormous, and Canada is taking a leading part in the research on its application in war and in industry.

Canada's industrial transformation introduced many thousands of additional workers to manufacturing industry and required the training of Canadian industrial workers in many new skills. Manufacturing industries learned and applied new techniques and processes. Management acquired new experience in supervising larger staffs of employees and in managing larger units of industry. Canada therefore enters the period of reconstruction with her industrial capacity vastly expanded and with a substantially larger proportion of her manpower skilled in manufacturing processes. The enormous expansion of capacity when compared with prewar domestic consumption points to Canada's continued and increasing interest in foreign markets to sustain a high level of economic activity.

II. THE WAR AND AGRICULTURE

Industrial expansion was not confined to manufacturing during the war years. Food too was an important weapon of war, and Canada continued to be one of the world's principal producers of agricultural products. Notwithstanding a substantial decline in the number of agricultural workers, it is estimated that the over-all volume of farm production in 1944 showed an increase of 36 per cent over that of 1939. "A comparison of 1944 production figures with the average in the five prewar years 1935-39 shows considerable increases in all the main food items except creamery butter, as follows:

	1944 (% difference from 1935-39)
Meats	+71
Eggs	+68
Grains	+57
Fruits and Vegetables	+22
Total Milk	+13
Cheese	+47
Fluid Milk	+38
Concentrated Milk Products	+20 (approximately)
Creamery butter	-3 (approximately)

"In 1938 the gross value of agricultural production was \$1,056,980,000. By 1943 it had risen to \$2,248,906,000 (revised preliminary figure). The total value in 1944 will approximate \$2,500,000,000. Cash farm income has increased 164% from \$664,300,000 in 1938 to \$1,751,700,000 in 1944."²

This increased agricultural output was required essentially for shipment to other United Nations, particularly to the United Kingdom. During the war Canada fulfilled the following bacon agreements with the British Ministry of Food:

Contract Year	Pounds
1939-40	291,000,000
1940-41	425,600,000
1941-42	600,000,000
1942-43	675,000,000

These shipments required increased hog production in Canada, and inspected slaughterings of hogs in 1944 were more than double the number in any prewar year. In addition large quantities of beef, butter, eggs and cheese were supplied to the United Kingdom.

The following table gives comparative data for 1939 and 1944 for those products which made up the bulk of Canada's wartime food contribution to the United Nations food supplies. These figures reveal the extent to which Canadian agricultural production increased during the war:

	1939	1944
Commercial Marketings—Cattle	1,183,000	1,529,000
—Hogs	3,706,000	8,766,000
—Sheep and Lambs	753,000	1,040,000
Production—Milk	16,147,000,000 lb.	17,575,000,000 lb.
—Butter	267,368,100 lb.	295,000,000 lb.
—Cheese	122,771,800 lb.	175,000,000 lb.
—Eggs	221,737,000 doz.	335,000,000 doz.
Exports of Wheat and Flour	192,674,000 bu.	255,398,000 bu.

Before the war Canadian agricultural products competed in export markets, principally the United Kingdom, with similar products from other countries. Canadian bacon competed with Danish bacon, and Canadian beef with Argentine beef. During the war years Canada's produce enjoyed a ready market overseas because other sources of supply were cut off either in whole or in part from the British Isles. With the end of the war the countries which formerly were sources of supply began to make efforts to recapture their prewar share of world trade in agricultural products, and to recapture it as soon as possible. At the same time it is to be noted that without a large loan the United Kingdom faces a shortage of Canadian dollars with which to pay for food imports from Canada. This is of serious

² *Canada at War*, op. cit., p. 21.

import to Canada when regard is had to the fact that during the prewar period more than half of Canadian exports to the United Kingdom were agricultural and animal products. The maintenance of a high level of agricultural production is essential to the Canadian economy and is desirable from a long-run standpoint because Canada can produce wheat, bacon and other staple foods at low cost. But a high level of agricultural production can only be maintained with a relatively high level of export trade.

III. FOREIGN TRADE

Our analysis of wartime economic developments in Canada points to the continued dependence of the Canadian economy on world trade. The economy supports a population of about twelve millions in an area almost as large as Europe. It was developed under national policies which aimed at the expansion of industries for the export of staples and the establishment of a protected domestic market for Canadian manufactured products. The economy as developed required an extensive capital plant involving heavy annual fixed charges. Its expenses became rigid, whereas the national income, dependent in large part on export trade, was flexible. Hence, while acquiring an important place in the world economy, the country became very dependent upon that economy and on world trade. In prewar years, ranking thirtieth in the world in population, it ranked sixth in terms of total foreign trade: eighth in terms of imports and fourth in terms of exports.

"A very brief review of Canada's resources in relation to the international economy will make clear why Canada plays such a relatively large part in that system, and is so profoundly dependent on it. Canada can produce large surpluses of many agricultural products (cereals, potatoes, apples, cattle, pork and dairy products), of many forest products (pine and fir lumber, spruce and poplar and balsam pulpwood), of many mineral products (gold, silver, copper, nickel, lead and zinc), and hydroelectric power more cheaply—i.e., with the application of relatively less capital and labor—than can be done in most other countries. On the other hand, either Canada cannot produce, or cannot produce as cheaply as some parts of the world, her own requirements of such essential industrial raw materials, as iron, coal, oil, rubber and tin; of tropical fruits, fibers and other natural products; and of many iron and steel, chemical and textile manufactures based on special local resources and techniques. Every country could display a list of surplus and deficit resources, but in few would both sides of the balance sheet contain such basically important products in such volume, and in few would the extremes be so great. Thus Canada is at once the world's largest exporter of wheat, newsprint and non-ferrous metals, and one of the world's largest importers of coal, oil and steel products. It is in this distribution and peculiar character of Canada's resources, and in her

lack of resources, that we find the explanation for many of Canada's distinctive economic, and related public finance, problems."³

An analysis of the Canadian economy before the war shows that she produced five times her own consumption of wheat, ten times her own consumption of newsprint and twenty times her own consumption of non-ferrous metals. Because of this large surplus production, the country supplied about 40 per cent of the wheat, two-thirds of the newsprint, and 40 per cent of the non-ferrous metals in the world export market. But Canadian production of these commodities was a much smaller proportion of total world production than the proportion of her exports to total world export trade. In other words, Canada before the war was a marginal source of supply for a large proportion of the commodities which constituted the bulk of her exports—inasmuch as countries which imported these goods from Canada produced a portion of their own requirements and in many cases were almost self-sufficient. As a supplier of so large a proportion of the world export market for some basic staples, and yet a marginal source of supply for many of these commodities, Canada's position as an important exporter was vulnerable in spite of her relative advantages in the production of these commodities. The effects of world depression and of reduced purchasing power accompanied by falling prices and increased restrictions on trade, were felt by Canada with more far-reaching effects on the whole economy than in most other countries, since income and employment were so highly dependent on export markets.

On the import side Canada's position before the war differed from her export position. Although Canada was a large importer of basic industrial raw materials, and while these imports in many cases constituted a very large proportion of total Canadian consumption of these goods, the total imports constituted a very small proportion of total production and of their consumption in the principal producing countries.

Another feature of Canada's prewar trade was the great degree of concentration not only in the commodities traded, but also arising from the fact that the great bulk of the trade was with two countries, the United States and the United Kingdom. This trade was of much greater importance to Canada than it was to the other two countries. Canadian trade with the United Kingdom and with the United States was 30 per cent and 50 per cent, respectively, of total Canadian trade, while United Kingdom trade with Canada constituted only 5 per cent of her total trade, and American trade with Canada was only 15 per cent of total United States trade. It was estimated that Canadian exports to each of these countries amounted to between \$30 and \$40 per capita, compared with their exports to Canada of only \$2.50 to \$4 per capita. This concentration made Canadian trade, and therefore employment and income, particularly vulnerable to varia-

³ *Report of the Royal Commission on Dominion-Provincial Relations (1940)*, Book 1, p. 179.

tions in the foreign trade policies of the United Kingdom and the United States, as well as to variations in the terms of trade arising from differential price movements, as compared with the effects of such variations in either of the other two countries.

In the war years Canada's external trade expanded enormously. Exports in particular became highly abnormal because of the country's position as a supplier of the United Nations. The following table shows the wartime increase in imports and exports:

CANADA. EXTERNAL TRADE⁴

1 Merchandise Imports					
Total Imports (Excluding Gold) From					
Calendar Years	British Empire U K	Other	U.S. A.	Others	Total All Countries
Millions of Dollars					
1939	113	75	497	65	750
1944	94	110	1,447	90	1,743
2 Merchandise Exports					
Domestic Exports (Excluding Gold) To					
Calendar Years	British Empire U K	Other	U.S. A.	Others	Total All Countries
Millions of Dollars					
1939	331	104	336	125	897
1944	1,235	494 ⁵	1,301	410 ⁶	3,440

A very large proportion of Canadian war production was for British account and the great expansion in agricultural production was mainly to provide food for the United Kingdom. Hence, whereas Canada's credit balances on current account with the United Kingdom and other Empire countries averaged about \$169,000,000 a year during the three prewar years, they increased sharply as a result of exports of munitions, food and raw materials to \$1,269,000,000 in 1942 and \$1,216,000,000 in 1943, after making allowances for Canadian war expenditures overseas such as subsistence payments for overseas personnel.⁶ The record Canadian balance of

⁴ Bank of Canada: Statistical Summary, Feb.-Mar. 1945, p. 31.

⁵ Exports to Other Empire and Other Countries in 1944 reflect substantial shipments of Mutual Aid and other goods on United Kingdom Account for consumption by United Kingdom and other United Nations forces, etc.

⁶ C. D. Blyth, "Financial Aspects of Canada's Post-War Export Trade." *Commercial Intelligence Journal* (Ottawa), December 9, 1944.

payments with the sterling area required financing. The Dominion Government met the financial problem by specially designed measures, including a gift of \$1,000,000,000 to the United Kingdom and adoption of a Mutual Aid program somewhat along the lines of the United States Lend-Lease plan. To the end of 1944 Canada provided \$1,800,000,000 for her Mutual Aid program, or a total of \$2,800,000,000 including the gift to the United Kingdom. During the earlier years of the war Canadian dollars were made available by the repatriation of about \$700,000,000 of Canadian securities from the United Kingdom, and also by converting an accumulation of sterling balances into a \$700,000,000 interest-free loan to the United Kingdom. These special wartime financial problems contrast with the prewar situation when the balance on current account with the sterling area of about \$169,000,000 a year could readily be converted into United States dollars or other currencies required by Canada to meet current liabilities with other countries.

While it is to be expected that Canadian merchandise exports to the United Kingdom in the post-war years will decline sharply from the abnormal wartime peak, there will be a continued large British demand for Canadian commodities, particularly agricultural products and basic raw materials which constituted so high a proportion of Canada's trade with the United Kingdom before the war. The financing of these exports will present a problem. As a result of the wartime repatriation of securities from the United Kingdom, Canadian payments of interest and dividends on British investments in Canada will be substantially less than before the war. While it is difficult to appraise the size of Canadian payments after the war for British shipping, commercial and financial services, it is not likely that these service payments will be a major factor in offsetting large Canadian exports to the United Kingdom. Furthermore, Canadian requirements for goods of certain types formerly imported from the United Kingdom will be smaller than before 1939 as a direct result of the development of Canadian industries during the war. To the extent that a high level of income is maintained in Canada it will provide an offset to these factors in that a higher standard of living will increase the demand for some British goods, particularly quality goods which have always formed a substantial part of Canadian imports from the United Kingdom, as well as for industrial equipment.

Although it is difficult to estimate the size of the credit balance on current account with the sterling area after the war, it seems likely that it will be higher than the average of \$169,000,000 for the three prewar years because of the anticipated increase in British requirements for Canadian goods. Since the demands of war have in part depleted United Kingdom sources of Canadian funds, and since Canada will look to Empire markets as continued outlets for a part of her manufactured goods and a large part of her

that domestic sources of supply replace previous sources of supply in the United States.

The prospect of a current account deficit with the United States points to the need of other sources of convertible exchange. "Canada's export trade to areas like Central and South America and to certain European countries should contribute a considerable amount of the needed exchange, for the likelihood is that Canadian commodities will be required to a greater extent than before the war in a number of these nations with convertible exchange which have been traditional markets for Canadian goods. Trade of this kind should be an important contributing factor in alleviating the prospective current account deficits with the United States. The extent to which convertible exchange originates from trade with these countries will depend partly upon the degree of success reached in the efforts for exchange and monetary stabilization."⁸

In order to attain the volume of exports which will make possible a fuller use of productive resources in the post-war years, Canada must adopt bold measures. It is not to be assumed, however, that the larger part of her exports in the transitional and post-war period will require special financing. Imports on a large scale, as has already been pointed out, are essential to the structure of the Canadian economy, and a larger national income than in the years before the war will not only be dependent upon a higher level of exports but will also require a greater volume of imports. To the extent that Canada imports more from and otherwise spends more in countries where there is a shortage of Canadian dollars, the need for special financing of exports will be less. Nevertheless, even with a larger volume of imports, in the absence of a greater degree of currency and exchange stabilization, and with severe economic dislocation in many countries, Canada must for some time be prepared to finance a portion of her export trade. A high level of employment and income are dependent upon a higher level of exports than in the prewar years: Canada is therefore vitally concerned with policies which will lead to an expansion of world trade.

IV. RECONSTRUCTION POLICY⁹

The Dominion Government has set as its aim "a high and stable level of employment and income." It is estimated that the employment of about 900,000 persons over the level of 3,693,000 in 1939 would provide a high level of employment for the population of June 1944, the natural increase of population increasing this figure by about 60,000 each year. These additional jobs were, until the end of the war, provided by government war expenditures. Not considering it "desirable or practicable to look to expan-

⁸ Blyth, *op. cit.*

⁹ This section is based upon the White Paper on "Employment and Income with Special Reference to the Initial Period of Reconstruction," presented to Parliament by the Minister of Reconstruction, April 1945.

sion of government enterprise to provide, to any large degree, the additional employment required," the Government proposed as a major task of reconstruction "to facilitate and encourage an expansion of private industry." Accordingly, manpower and resources released from the armed forces and from war industry were directed

- "(1) to contributing, through international arrangements, to the relief and rehabilitation of devastated countries;
- (2) to the maintenance and resumption of exports to our historic markets and, as supplies and shipping permit, to the development of new continuing markets;
- (3) to the re-conversion of industrial capacity released from war use and to the carrying out of desirable industrial expansion and modernization;
- (4) to the replacement and modernization of the equipment of agriculture and other primary industries and to the provision of additional facilities for production and marketing services;
- (5) to providing for as large a housing program, both rural and urban, as available labor and materials will permit;
- (6) to providing for increases in consumer goods produced for the civilian market, as the demobilized armed forces pass into the civilian population, and, as circumstances allow, to meet deferred civilian demand."

Export Trade

The Government proposes to use appropriate means to influence expenditures which provide remunerative employment and income, with particular emphasis on those most susceptible of encouragement and control. In the area of export trade, it considers that annual exports of not less than one and three-quarter billion dollars at 1945 prices for merchandise exports and non-monetary gold is a practical and desirable post-war target. This level would be about one-half the swollen wartime exports and about 60 per cent above the prewar level in dollar value, but only 15 per cent higher in terms of the amount of goods to be exported.

With the termination of the war it became immediately necessary to take steps to re-establish Canada's export trade on a dependable and expanded basis. There were large demands for goods in devastated countries, as well as an unsatisfied demand in other countries which had been deferred because of shortages of goods and shipping. The problem of exports was one of supply and of finance. Through the United Nations Relief and Rehabilitation Administration financial provision was made for some exports. Under the Export Credits Insurance Act, the Government proposed to restore prewar markets and develop new ones by guaranteeing and extending credits to other governments for financing Canadian exports.

Equally, since dependable trade ultimately is an exchange of goods for goods, it is proposed to build up Canadian imports "and the exporting capacity of other countries so that we may ultimately receive imports in payment for our exports."

The Government is looking to an expansion of total world trade "within which other countries as well as Canada can increase their exports. The expansion of Canadian exports will be one phase of an expanded Canadian economy which will require for its use greatly increased imports. The expansion of exports is not looked on as a means by which unemployment is to be transferred from this to other countries, nor is the contraction of Canadian imports any part of the Government's employment policy."

An expansion of total world trade must be achieved by collaboration with other governments, and in the case of Canada, particularly with the governments of the British Commonwealth and of the United States. The Canadian Government urges a wide collaboration in the reciprocal reduction and removal of trade barriers and attaches special importance to "the reconstitution of multilateral trade on a firm basis and arrangements under which the proceeds of our exports may be spent wherever we desire to obtain our imports." Accordingly, Canada participated in the formation of and has become a member of the International Monetary Fund and the International Bank for Reconstruction and Development. The Government is also participating in other discussions looking to international agreements for an expansion of world trade, since it believes that "a high degree of freedom of trade is thoroughly compatible with, and necessary to, a balanced program for promoting a high level of employment and income."

Anticipating that many of the United Nations, and particularly the United Kingdom, would face difficult balance-of-payments problems with the end of Lend-Lease and Mutual Aid and concerned lest these difficulties should lead to the establishment, even on a temporary basis, of discriminatory currency or trade blocs which would hamper economic recovery, Canada urges that these trade difficulties be solved by international collaboration "as farsighted as that undertaken during the war." The Government has expressed its willingness to extend adequate credits and has extended such credits to these countries to finance their import requirements from Canada. "In the view of the Government, appropriate terms for repayment of these credits would recognize unequivocally the dependence of such international debt payments on the expansion of world trade and ample markets for the exports by which credits must be repaid."

Private Investment

"Export trade has been the greatest dynamic force influencing the level of national income and employment in Canada. Next in importance is the investment of private capital in industrial and commercial buildings and

equipment, goods in stock, power and transportation facilities, exploration and development of natural resources, and housing." In the past the amount of such investment has been closely related to the volume and profitability of Canada's export trade, "but it need not be so fully dominated by export trade in the future."

As capital expenditures, both public and private, were absorbed during the war in building war production facilities and in equipping the armed forces, there developed a backlog of capital and maintenance expenditures to be made as soon as labor and materials became available. Within the limitations imposed by these scarcities, the Government facilitated the most urgent expenditures and the speedy conversion and expansion of industries, with special attention to the localities in which the post-war adjustment was greatest. To this end investment and maintenance expenditures have been afforded some substantial relief from the effects of wartime taxation. To allow business enterprises a fair chance of recovery of newly-invested capital, the business taxpayer may in respect of new investment in industrial plant and equipment select a rate of depreciation not less than one-half and not more than double the normal rates. The National Housing Act of 1944 provides for financing at the lowest rates in Canadian history, housing for home owners and for tenants, low rental housing projects, houses on farms and modernization and improvements.

During the war the Government's economic stabilization policy was designed to keep down costs and to achieve a post-war position in which the cost of new investment in buildings, equipment and materials would not be a barrier to employment. Wartime taxation, both in its form and rates discouraging to new investment, was designed deliberately to be discouraging in order that more resources could be used for war purposes. With the war's end the Government plans not only to reduce taxation, but also to develop its fiscal policy so as to encourage the increase of private investment: it proposes particularly to eliminate or minimize taxation which contributes to a higher level of production costs.

The Government proposes to pursue a monetary policy under which low interest rates will continue. To provide credit for the establishment and expansion of industrial enterprises in circumstances in which lending institutions have hitherto been unable to provide adequate financing, the Industrial Development Bank has been established by the Dominion Government. The facilities of this agency are particularly important for small and new enterprises on the development of which much future employment will depend. For the improvement of buildings and equipment on farms to increase productive efficiency, the Farm Improvement Loans Act provides credit through the regular banking system under limited Government guarantee.

Consumption

While consumption by civilians is now well above the level of 1939, a substantial increase is anticipated in consumption expenditures which have been reinforced temporarily by the need to replenish trade inventories depleted during the war. The continuance of this high level of consumption expenditures will depend on the maintenance and distribution of incomes.

In the period of conversion of war industry when some dislocation is unavoidable, benefits paid out of the fund of over \$300 million built up under the Unemployment Insurance Act of 1940, which came into effect when employment was rising, will contribute to an important degree to the maintenance of consumption expenditures and in turn to maintenance of employment in industries producing consumption goods and services. Similarly, the Family Allowance Act of 1944 now supplements incomes of families in the lower-income groups and thus provides the means for maintaining or increasing consumption by these groups. The Agricultural and Fisheries Price Support Acts which are designed to safeguard the primary producer from the effects of dislocation in export trade will help to underwrite consumption and other expenditures.

These measures for supporting and stabilizing expenditures will be supplemented by further social security legislation as soon as financial and administrative arrangements with the Provinces can be agreed upon under the Canadian system of federal government.

Public Investment

In the war years Government expenditures of necessity played the dominant part in determining the level of income. In one sense, "the problem of the transition is to maintain the level of employment, while substituting private for a large part of public expenditures." The Dominion Government recognizes that the post-war employment problem is not to be solved by huge expenditures on public works. Nevertheless, it has declared its intention to manage its capital expenditures so that they will contribute to the maximum to the improvement and stabilization of employment and income.

It is proposed to undertake experimentally "the deliberate use of public investment expenditures as a permanent instrument in employment policy." Accordingly, there will be advance planning of all necessary and desirable Dominion projects in order that there may be available at all times a "shelf" of soundly planned projects ready for execution when prospective employment conditions make it desirable to increase public investment expenditures.

In furtherance of the public investment policy, it is planned to implement, in co-operation with the provinces, a new Dominion policy of ex-

penditures on the development and conservation of natural resources. A large part of these expenditures may be varied according to employment and income levels and would provide a measure of alternative income in areas affected by declines in export markets. In the exploration, development and safeguarding of natural resources, and on national and international commercial routes, civil aviation will emerge as a great and largely new Canadian employment. "The amazing wartime advance of aviation, the large number of airfields constructed in Canada for military or civil use and the decisive significance which transportation has always had in Canadian development emphasize the importance which civil aviation will have as a productive field of public investment after the war."

Government Finance

The Government's policies for the maintenance of levels of employment and income greatly above those of prewar years will call for higher Government expenditures and revenues than in prewar years. This is not inconsistent with anticipated post-war taxation at substantially lower levels than at present.

The Government states that it "will be prepared, in periods when unemployment threatens, to incur the deficits and increases in the national debt resulting from its employment and income policy, whether that policy in the circumstances is best applied through increased expenditures or reduced taxation. In periods of buoyant employment and income, budget plans will call for surpluses. The Government's policy will be to keep the national debt within manageable proportions, and maintain a proper balance in its budget over a period longer than a single year."

Further, accepting the fact that high employment can be based only on high production and that to achieve this objective prices must be kept in hand during the transition, the Government is determined to safeguard its economic stabilization program in order to prevent the accumulated store of buying power from being dissipated in a needless inflation.

V. THE FIRST POST-WAR YEAR

In the first year after the war the reconversion of the Canadian economy to a peacetime basis proceeded more rapid than could have been anticipated, although its progress was slowed down by interruptions of production resulting from industrial disputes. At mid-1946 the Gross National Product was running at about \$11,000,000,000 as compared with the 1944 wartime peak of about \$11,750,000,000. High levels of production, employment and income were maintained by a high level of exports, not only of foods and raw materials but also of manufactured goods, including machinery, trucks, locomotives and railway cars; by private capital investment in plant and machinery of around \$1,000,000,000 for 1946, about 20 per

cent more than in 1945 and 80 per cent above the 1939 level; and by a large increase in consumers' expenditures.

World food requirements and good crops in Canada in 1946 maintained agricultural income at a high level. An agreement was reached with the United Kingdom for the purchase of Canadian wheat over a four-year period beginning August 1946, as follows: 160,000,000 bushels in each of the years 1946-47 and 1947-48, at a fixed price of \$1.55 per bushel, and 140,000,000 bushels in each of the years 1948-49 and 1949-50, the two latter prices being subject to final negotiation. Under this arrangement the United Kingdom is assured of substantial quantities of wheat at prices which are below 1946 world prices, while the Canadian farmer is protected from heavy losses in the event of a subsequent world slump in wheat prices. The agreement is subject to such modification as may be necessary to bring it into conformity with any international agreements to which both countries are parties.

The re-establishment and expansion of Canada's export trade involved the extension of large export credits. In March 1946, an agreement was reached for a credit of \$1,250,000,000 to the United Kingdom, and loans of some \$650,000,000 were made to a number of other countries, including France, the Netherlands, China, Belgium, Czechoslovakia, and Norway. The extension of these credits abroad necessitated continued large borrowings by the Government within Canada, but these borrowings were substantially less than during the war years. The estimated budget deficit for 1946-47 is under \$300,000,000 as compared with \$1,736,000,000 in 1945-46 and over \$2,550,000,000 in 1944-45. Even with taxation reduced from its wartime peak, governmental revenues will continue to be high as long as a high level of production, employment and income is maintained.

SUMMARY

The fundamental post-war problem for Canada is to find employment for some 900,000 workers more than were employed in 1939. To attain this end a relatively high level of export trade will be vitally necessary. "A low level of export trade might not ultimately defeat the attainment of high employment, but it would involve painful re-organization among our industries, costly delay, and reduced standards of living."

Canada has emerged from the war with a greatly increased productive capacity. New resources have been developed, new industries established, and new skills acquired. The degree to which this capacity will be used is in large part dependent upon the type of international economy which will be established. Its fullest use is dependent upon post-war collaboration between Canadian and other governments as bold and as imaginative as that which resulted in the great wartime increase in the output and exchange of goods.

CHAPTER XIX

MEXICO

by SANFORD A. MOSK

"Step by step, Mexico's economy is losing its colonial character. Yesterday a country dependent on foreign sources for nearly all its manufactured goods, it is today rapidly becoming a modern industrial nation." Thus writes Carlos H. Benitez, an active participant in Mexico's industrial development, expressing the dominant economic theme of today in his country. (*The Inter-American*, May 1944.) In similar vein, a correspondent for *Business Week* (March 10, 1945), reports that "Mexicans are being lifted by their huaraches into the machine age, the era of the mechanical plow, scientific farming, and high-speed manufacture."

These statements are at once a description of current trends and an aspiration for the post-war future, for in addition to the substantial achievements made during the war years along industrial lines, the atmosphere of the business community in Mexico is filled with plans for even greater developments in the future. President Avila Camacho and administration leaders have great confidence in Mexico's industrial prospects. Indeed, they have drawn up the broad outlines of an industrialization program. Industrial policy is replacing agricultural policy as the main concern of the Mexican government in the realm of economics. In this fact, and in the rapidity with which industrialism is being advanced, Mexico may find some serious threats to its economic, social, and political stability.

GOVERNMENTAL SUPPORT OF INDUSTRIALIZATION

Industrialization in Mexico, as elsewhere in Latin America, rests upon the strong emotional drive of nationalism, which raises it above the plane of economics. Industrialization insures economic independence, and economic independence insures political independence—so runs the chain of reasoning. The merit of this position need not be discussed here. However, we must recognize its force in the thinking of statesmen and the public at large in Mexico and in many of the other Latin American republics. Where industrialization is regarded not as an economic end in itself, but as a means to such ends as greater international political prestige and cultural advance of a nation, we may expect to find government policy strongly supporting

rapid industrial development, without giving careful scrutiny to the problems that are likely to arise in the process. These conditions, it appears, now exist in Mexico.

The government of Mexico has done much to encourage manufacturing development since President Avila Camacho took office at the end of 1940. During the preceding administration of Lázaro Cárdenas (1934-1940) the government's economic program was concentrated upon agrarian reform. Only co-operatively organized rural industries, such as sugar refining, were favored under the "six-year plan" drawn up in 1934. The shift in public policy since 1941 is very striking—major efforts are now being made to encourage modern industrial expansion on a broad front.

A law enacted in April 1941, authorizes the Secretary of National Economy to grant special privileges to new industries which are considered necessary for national industrial development. These privileges include exemption for five years from income and excess profits taxes, stamp taxes, and federal industrial taxes, and also the right to import equipment and raw materials free of duties. The law of 1941 has been very effective in stimulating new enterprises, for business interests have been eager to take advantage of the concessions offered. Three years after the law was passed, 285 firms were enjoying its privileges. Similarly, the Federal District (consisting of Mexico City and environs, one of the principal industrial areas of Mexico) grants five year exemptions from local taxes to selected new industries.

The Mexican government is also providing indirect financial aid to new industries. This is done by means of a semi-official agency known as *Nacional Financiera*, which purchases corporate securities for its own account and for distribution. In addition to its own capital of 20 million pesos, this institution obtains funds by selling bonds, receiving deposits, and borrowing from other banks. Mexico's central bank, the Banco de México, has probably been an important purchaser of its bonds, for it is the stated policy of the Banco de México to support industrial credit.

In 1944 the Mexican government set up a new agency to promote industrialization, the Federal Commission for Industrial Development. This agency has broad powers to set up and operate industries considered essential for industrialization of the country, but which have not been organized by private investors. Enterprises operated by the Commission are not to remain permanently in government hands, but eventually will be sold to private interests. In the meanwhile, shares of stock in the Commission enterprises will be offered to the public through the normal channels. Beyond the statement that the Commission will be provided with "ample funds," nothing has been said thus far regarding the resources to be placed at its disposal by the Mexican government. It is uncertain whether the Commission will actually undertake industrial projects itself or whether it will work

through private enterprise, suggesting projects and assisting the enterprisers in getting credit.

EFFECT OF THE WAR ON MEXICAN INDUSTRY

Wartime conditions provided a stimulus to industry in Mexico, especially after Pearl Harbor. Mexico found it necessary to supply herself with many commodities formerly imported, and the demand for all kinds of goods and services was expanded by expenditures for strategic minerals and other war materials. Some of this purchasing power exhausted itself in higher prices, but it also stimulated expansion in manufacturing.

The current rate of industrialization could not have been achieved without efforts by the Mexican Government to secure allocations of machinery and equipment from the United States. The organization in April 1943, of the Mexican-American Commission for Economic Co-operation, provided a good vehicle for presenting Mexican requirements to Washington authorities. In somewhat changed form this body continued to operate until January 1945. The Commission not only approved a number of immediate projects, thereby assuring supply assistance from the United States, but it also helped to crystallize Mexican plans for longer-run development.

The record of industrial advance in Mexico during the war period is an impressive one. According to official figures, the volume of manufacturing production as a whole rose by about 25 per cent from 1939 to 1943. (Value figures show an increase of almost 100 per cent, but this reflects the marked advance in the Mexican price level.) Many of the industrial developments started during this period were not yet in full production. Their effect will be realized in the future when the plants just constructed or now being constructed are brought into full operation. A good share of the new plant is found in strategic spots in the industrial structure, thus furthering the all-round industrial development of the nation.

Iron and Steel

The iron and steel industry occupies a prominent place in Mexico's wartime economic expansion. Before the war, the output of iron and steel products in Mexico supplied about one-half of the annual requirements of the country. At Monterrey, in the northeastern section of the country, the plant of the *Cia. Fundidora de Hierro y Acero*, the first modern steel works in Latin America, has been in operation since 1903. It was the largest single iron and steel plant in Latin America, although new enterprises in Brazil may now be surpassing it. The Monterrey company has recently doubled its capacity for pig iron production. The other principal wartime addition to Mexico's iron and steel industry is the new plant constructed at Monclova by Altos Hornos de México, including a blast furnace and mills to produce

galvanized sheets and tin plate. This enterprise was granted credits up to \$6 million by our Export-Import Bank to pay for equipment and materials purchased in the United States. The Mexican government, too, is reported to be helping to finance the firm through Nacional Financiera.

When the various projects now under way are completed, Mexico's iron and steel industry will have a productive capacity of 600,000 tons per year, compared with an output of 165,000 tons in 1941 and an estimated capacity of about 300,000 tons at the end of 1943.

Cement

Notable progress was made in the cement industry during the war period. Output was increased to meet the demand in the construction of new industrial plants, office buildings, highways, etc. New facilities for the production of cement were spaced about the country to insure their maximum effectiveness in future economic development. To achieve this objective, the Mexican government worked out a program for long-run expansion in the cement industry, in terms of anticipated regional requirements, sources of raw materials, and distances to principal markets.

By January 1945, productive capacity of the cement industry was reported at more than 900,000 tons per year. Five new plants were then under construction. When these are completed, and the additional units scheduled for existing establishments are installed, Mexico's potential cement production will be 1,600,000 tons annually, four times the 1939 output and more than double that of 1943.

Chemicals

Progress so far appears to be more striking in the establishment of chemical plants than in actual output. By the end of 1943 over 50 new chemical enterprises had been granted exemptions on taxes and duties under the 1941 law. In spite of recent advances, the chemical industry of Mexico appears to be still in the first stages of development. The basic resources available have not been used effectively because of the small size of the plants and their specialized character, and also because of the wartime difficulty of getting equipment. Even so, the industry has been able to satisfy current domestic requirements for a number of chemicals, and allied industries such as those producing soap, paints and varnishes, matches and printing ink, have expanded output substantially. In the manufacture of alcohol, too, Mexico has made significant gains under the stimulus of wartime demand. It is clear that the foundations are being laid for future development that will be important for the whole industrial structure of the country.

One of the most striking industrialization projects now getting under way involves a series of related developments at Atenquique in the State of

Jalisco. When completed, the enterprise will produce woodpulp, paper, cellulose, caustic soda and chlorine from local forest resources (covering about 115,000 acres) and salt and limestone deposits. A total investment of about 20 million pesos (\$4 million) will be required for this purpose. Part of the capital, it is reported, will be supplied by the Mexican government, and the remainder by private investors in Mexico. No United States capital is to be involved. The whole Atenquique project is an ambitious one; it includes hydroelectric facilities to provide power for the various industrial operations. The Mexican Government has shown such a strong interest in the project that its completion is assured as soon as materials are available.

Textile Manufacturing

Textile manufacturing has enjoyed a material war boom. The industry ranked first in 1940 in number of workers employed and total wages paid out, and was exceeded only by the food processing industry in value of production and value of capital investment. Output expanded during the war both for the domestic market and for export to Central America and the West Indies. In cotton textiles, the largest branch of the industry, production was about 50 per cent higher in 1943 than in 1939. Output for the whole textile industry rose by 25 per cent in the same period. Woolen manufactures barely held their own, because of the shortage of raw wool, while rayon output was cut in half because Mexico was unable to secure an adequate supply of raw materials from abroad.

In spite of the increased output achieved in cotton textiles, the industry is technically antiquated and inefficient (especially in weaving), when judged by contemporary standards in other countries. In fact, it is said to be as much as 40 years out-of-date. This backward technical condition is explained by high tariff protection over a long period of time, the small pre-war domestic market combined with a diversified demand for a wide range of products, and limitations on the number of machines operated by each worker as specified in collective bargaining contracts. The problem of modernizing the manufacture of cotton textiles in Mexico received a great deal of serious attention in the past few years. Some preliminary steps have been taken, although it was difficult to obtain new equipment during the war. Plans to modernize two textile mills in 1945 were approved by the Mexican-American Commission for Economic Co-operation, and a technical mission from the Armour Research Institute of Chicago has begun a one year survey of textile manufacturing as well as the leather, lumber and coal industries. This mission, which was invited by the Banco de México, will make recommendations for technical improvements. Given reasonably good expectations for the post-war market, it should not be difficult for the cotton industry in Mexico to raise its standards of performance to modern levels.

Rayon

Before the war, all the rayon yarn used for the manufacture of rayon textiles in Mexico was imported, mostly from Italy and the United Kingdom. During the war these sources were not available, and the United States was able to satisfy Mexico's requirements only in part. In 1942 a small rayon-yarn plant was established near Mexico City, with second-hand equipment purchased in the United States. A much larger development was started in 1944, when the Celanese Corporation of America joined with Mexican capital to form Celanese Mexicana. This enterprise is now constructing a plant at Poncitlán, Jalisco, with an estimated annual capacity of 6 million pounds of rayon yarn. An output of this amount would satisfy about three-fourths of Mexican requirements on the basis of prewar imports. Some observers, however, calculate that it will supply only one-half of the post-war demand.

Food Processing

An interesting new development in Mexico's food processing industries during the war has been the establishment of facilities to produce dehydrated fruits and vegetables. Thus far, the success of the plants performing these operations has greatly surpassed the expectations of the Mexican business community, which was extremely skeptical about the first proposals. Possibilities of further development are now being explored. The first plants were set up in the peninsula of Baja California in 1941 to process chile peppers. At the end of 1944 Mexico was reported to have 20 dehydration plants, 13 of which were engaged in the production of banana flakes and banana flour. In spite of the wartime enthusiasm for this industry, the post-war market for all dehydrated foods is obviously an uncertain one.

Other Industries

In many other industries, plant expansion has been undertaken since the outbreak of the war. In October 1944, International Harvester Company announced that it will build a plant to make and assemble agricultural machinery at Saltillo, in close proximity to Mexico's center of iron and steel production. The fifteen plants now making farm implements in Mexico are very small, and walking plows are the only implements produced in substantial quantities. In view of the potential importance of agricultural machinery to the economic development of Mexico, the new plant is probably but a first step in the expansion of this industry. It is estimated that the establishment will cost 6 million pesos (\$1.2 million).

At Toluca, near Mexico City, a factory is being built to produce electric motors, generators and electrical appliances. The capital of 12 million pesos (\$2.4 million) is to be wholly supplied by Mexican investors. This

plant will probably produce only small units. The Mexican subsidiary of General Electric in 1943 opened a small but modernly-equipped fluorescent lamp factory at Monterrey. A plant to manufacture tin containers for Mexican canneries is being constructed in Mexico City by a new concern, Envasas Generales Continental de México, a company with a capital of 6 million pesos. Twenty per cent of the capital is being provided by Continental Can Company of New York, which will supply machinery and technical direction for the firm. The two companies together plan to place laboratory technicians at the disposal of Mexican canneries.

Some manufacturing industries made little or no addition to productive capacity, but were able to expand output during the war. These include industries producing beverages, ordinary kinds of processed foods, leather and cordage.

PLANS FOR THE FUTURE

Manufacturing

Literally hundreds of plans for future economic development have been reported. Some of these projects are vaguely designed for the "post-war period." Many, however, are certain to be undertaken in the near future. Fortunately, we have a source of information about the latter group, in the report which the Mexican-American Commission for Economic Co-operation published in January 1945. An even better source would be the detailed statement prepared by the Commission's subcommittee on Mexico's long-term capital requirements, but this statement has not been released to the public. In using the published report of the Commission, it is necessary to make an assumption regarding the period of time involved, because the report itself does not define this period precisely. The Commission's estimates for outlays on future projects refer to the years 1945 through 1948 "and the immediate subsequent years." It is reasonable to assume that the period referred to in this manner by the Commission covers roughly the years 1945-1950. This assumption is made in the discussion which follows.

Aggregate investment for projects of major significance to the economic development of Mexico is expected to reach 1,915,000,000 pesos (\$383 million) in the period 1945-1950. Approximately 75 per cent of this sum will be absorbed in irrigation and power developments; these topics will be discussed later. Investment in the textile industry is calculated at about \$28 million. Undoubtedly, most of this sum is to be used in the rehabilitation of Mexico's antiquated cotton textile mills. Informed persons estimate that an investment of \$20 million will be needed to modernize this industry. For the development of the iron and steel industry, the Commission arrived at a figure of \$20 million. It is not clear, however, whether this figure includes investment in the mining of iron ore. Next in order is the chemical industry, with an estimated investment of about \$14 million. Other specific esti-

mates given by the Commission include the following: shipyards, nearly \$2 million; refrigeration plants, \$2 million; paper and pulp mills, \$1 million; construction materials, nearly \$1 million. Finally, an item of about \$7 million is assigned to miscellaneous; it may be assumed that most of the projects in this class are small manufacturing establishments.

All the main projects embraced in the investment estimates of the Mexican-American Commission for Economic Co-operation will surely be under way if not completed by 1950. This assurance is based on the following propositions: 1) either private enterprise or a public agency has presented the project to the Commission in detailed form; 2) the Mexican government must view the proposals favorably, since the Mexican members of the Commission approved them at a time when they had to choose among hundreds of competing claims for a limited supply of capital goods; 3) the United States commissioners must have considered them feasible in terms of likely supply conditions in this country. The abrupt end of the war in the Far East insures easier supply conditions than could have been anticipated at the time the commission prepared its report.

Assuming that the projects recommended by the Commission are completed or at least under construction by 1950, a few observations may be attempted on the longer-run needs for investment in principal Mexican manufacturing industries. The contemplated investment of \$20 million for iron and steel production, in addition to the existing capital should satisfy the requirements of this industry for a long time. Iron and steel capacity will suffice to satisfy the demands arising out of a substantially expanding economy. Similarly, an investment of \$28 million in textile production by 1950 will not have to be supplemented by large sums for several years thereafter, since it will not only modernize and greatly increase output capacity in cotton manufacturing, but should also allow for expansion in the woolen and rayon branches of the industry. The chemical industry, on the other hand, will probably call for large additions to capital equipment, beyond the \$14 million anticipated for the years 1945-1950, especially for the manufacture of fertilizers. Of the other industries that can be identified in the report of the Commission, paper and pulp manufacturing may be expected to undergo a more important development than can be accomplished with an investment of \$1 million by 1950. Cement production is probably included in "construction materials," for which the total is approximately \$1 million. It seems safe to forecast subsequent expansion in cement capacity.

Two other industries not specifically mentioned in the report of the Commission (probably included in miscellaneous) appear to be starting a process of development that will require significant additions to capital equipment over a period of years. These are: 1) the manufacture of farm implements, which should play an important part in the whole pattern of

future Mexican economic development, and 2) the processing of food products both for domestic consumption and export.

The preceding discussion of plans for the future has dealt almost entirely with those manufacturing industries for which specific estimates were given in the report of the joint Commission. A long list could be made of other kinds of plants that have been mentioned in business or official sources as projects for post-war construction. The following illustrations show how they range widely over the field of manufacturing operations: a branch plant of Celotex Company (financed jointly with Mexican capital) to make building and housing supplies; a project to develop by-products of coal; a factory to make locks and padlocks; an additional plywood plant; expansion of a plant which produces air-conditioning equipment; branch of a United States concern to make small Diesel engines; branch of another United States firm to manufacture industrial foil; manufacture of X-ray units; two companies to produce passenger and truck trailers. Although many of the projected enterprises are probably quite small, their combined effect on the Mexican economic structure would be considerable.

Oil

Expansion of Mexico's petroleum industry in the post-war period can be taken for granted, in both producing and refining branches. Ever since the foreign oil company properties were expropriated by the Mexican government in 1938, this industry has operated under a number of marketing, organizational and technical handicaps. These are being cleared away, however, and *Petróleos Mexicanos*, the official corporation which now operates the industry, has recently been able to lay the groundwork for some expansion.

New oil discoveries made in 1944 near Nuevo Laredo, on the Rio Grande River, are reported to be promising. *Petróleos Mexicanos* is planning to sink wells in this area and to put in a pipe line to carry the crude oil to Monterrey, where a new refinery will be built. Other exploratory operations have been carried out elsewhere in Mexico, particularly on the margins of the known fields.

Plans also have been drawn up for a number of improvements in refining and other facilities. Some of these are being carried out now while others are scheduled for the near future. The refinery at Atzacapotzalco, near Mexico City, is being enlarged at a cost of 75 million pesos (\$15 million) by the construction of a plant to produce 100-octane aviation gasoline. Included among the pending developments are the following: installation of new pumps on the pipe line from Poza Rica (near Tampico) to Mexico City, to double the amount of crude oil that can be handled daily; construction of new pipe lines; building of a paraffin-manufacturing plant near Mexico City; expansion of distribution facilities within the country.

The post-war marketing outlook for petroleum production in Mexico is favorable. Domestic consumption will undoubtedly be much greater than it was before the war, as a consequence of expansion in motor and air transport, the development of new uses for petroleum products, and increasing use of petroleum as an industrial fuel in an expanding industrial environment. Per capita consumption of oil in Mexico has amounted only to 1.1 barrels per year, compared to 2.2 barrels in Argentina and 8.7 in the United States.

Large exports of crude oil also seem probable. Mexican crude petroleum is heavier than that found in most parts of the U.S., and yields a higher proportion of fuel oils. There is growing concern about the conservation of petroleum resources in the United States, and the United States granted a reduction in the duties on Mexican crude oil in the trade agreement negotiated in 1943. The heated controversy over the expropriation of 1938 may now be considered a closed chapter, inasmuch as all the American oil companies have accepted the terms of the settlement agreed upon by the United States and Mexican governments in 1942. The fact that the Export-Import Bank established a \$10 million credit for a high-octane gasoline refinery in Mexico may be taken as evidence of a new attitude in the United States, favorable to the development of Mexico's petroleum industry. Other Latin American countries, such as Cuba, to which sizable shipments of Mexican petroleum products have been made during the war, also can be counted among the post-war export markets for Mexican output.

Substantial investments can be expected after the war in all branches of the petroleum industry. The possibility that a conservation problem will arise as the rate of exploitation is stepped up must be recognized, but judging from present indications this is not likely to be a serious question in Mexico in the years immediately following the war.

Electricity

The electric power industry in Mexico promises to go through a process of extensive development in the post-war period. The potential market for residential electric service is great, for more than half of Mexico's population does not enjoy such service at all at present. The residential market, however, will probably develop quite gradually in the country as a whole. The most immediate and pressing demand for electrical energy comes from industrial expansion. One authority calculates that Mexico could with assurance set about providing herself with facilities to supply ten times more power than is generated at the present time.

Power development is being actively encouraged by the Mexican government, largely through the agency of a Federal Electricity Commission. Established in 1937 to plan, construct and operate public power projects needed for an effective power system for the nation as a whole—projects

which the private power companies were unable or unwilling to undertake—the Commission has depended for funds mainly on a 10 per cent tax on the consumption of electricity. This tax has provided only about 6 million pesos annually. Recently, however, additional funds have been made available to the Commission by the federal and state governments.

In 1943 the Federal Electricity Commission drew up a ten-year program of power development, designed to fit in with and to extend the use of existing facilities through the installation of new steam, Diesel, and hydroelectric plants. Foremost in this plan were units to increase the supply of electricity in the industrial centers of Mexico City, Puebla, Orizaba and Veracruz. The cost of the whole program was estimated at 300 million pesos (\$80 million), about one-half of which was expected to be spent on imported equipment. In 1944 progress was reported on various parts of this program as well as on projects begun in earlier years, and the first of three units for the important Ixtapontongo hydroelectric project, near Mexico City, was put into operation.

Greater developments are planned for the next five years than those comprised in the whole ten-year program announced in 1943. A report of the Mexican-American Commission for Economic Co-operation indicates an outlay of \$136 million for power development in the period 1945-1950, or more than double the original ten year estimate. Even the new program will leave ample opportunities for further expansion. Large investments in power development can be expected in Mexico for many years in view of the potential market, a favorable government policy and the existence of ample hydroelectric power resources, only about 5 per cent of which have so far been developed. Although some of the unused power sites are located in areas where it would not be feasible to develop them for a long time, or perhaps never, Mexico has no lack of power resources that can be economically exploited in an expanding post-war economy.

Transportation

Improvement in internal transportation is generally recognized in Mexico to be one of the basic prerequisites of further economic development. Much of the recent public discussion places too much emphasis on railroad improvement and construction, and too little on building a network of highways. This may be a reaction to the near breakdown of the Mexican railways in 1942, when they were suddenly faced with the problem of handling large shipments of minerals and other strategic materials to the United States. It became evident at that time that the National Railroads had deteriorated greatly during several years of fluctuating organizational and managerial conditions.

To facilitate the flow of materials needed for the war effort, the United States Government subsequently provided technical and financial aid to re-

habilitate some of the principal lines. This apparently led the Mexican Government to formulate a more comprehensive rehabilitation program for the whole system operated by the National Railroads. The plan involves an estimated expenditure of 270 million pesos (\$54 million) for ballast, ties, track, bridges, culverts, locomotives, passenger and freight cars and buildings, and will probably take several years to complete.

Some progress was made in the construction of two new lines in the past few years, one in the northwestern corner of the country (Sonora-Baja California) and the other in the southeastern region (Puerto México-Campeche). The latter will link the peninsula of Yucatan to the rest of Mexico by rail.

For the future, a number of other railroad extension and reconstruction projects are frequently mentioned. If all of these are actually carried through, large capital outlays will be necessary over a period of years. Sizeable expenditures would have to be made for imported materials and equipment, with a resulting strain on Mexico's accumulated foreign exchange reserves and balance of payments. The pattern of the existing railroad network, with the addition of the line that will join Yucatan to the rest of the country (and perhaps a few short lines to tap the timber country of western Chihuahua and Durango), seems well adapted to perform its main function of hauling bulky commodities over long distances. In the immediate post-war period it would seem to be sound policy for Mexico to concentrate its railroad program upon further improvement and modernization of the present system rather than upon extensive construction of new lines. The main transportation effort can be thrown most profitably into an extensive highway building program.

A network of roads is vitally needed in Mexico in order to realize possibilities of economic development in the many parts of the country that have not yet been tapped by modern transport, to facilitate a greater degree of commercialization in agriculture as well as an expansion in cultivated acreage, and to develop the internal market for manufactured products. In recent years emphasis has been placed on the construction of high-standard trunk highways for tourist traffic, such as the Mexican portion of the Pan-American Highway. Much has been accomplished on these worthwhile projects. There are still large areas, however, devoid of roads, or at least of roads that can be effectively used by motor transport. Of Mexico's 43,700 miles of roads, 6,000 can be classified as "all-weather," and only 3,600 miles are paved. The investment per mile required for hard-surface feeder highways, designed for the light truck traffic likely to continue in use, need not be very great. Mexico could clearly spend large sums of money for road construction, with great benefit to the national economy.

Mexico has already embarked upon a program of harbor improvement and shipyard construction, which may attain sizable proportions in the next

five or ten years. Among the projects under way or contemplated are the following: a shipyard at Veracruz, estimated to cost about 25 million pesos; a shipyard at Tampico, where vessels ranging from 500 to 6,000 tons will be built; improvements for the two terminal ports of the Tehuantepec Railroad, Puerto México and Salina Cruz, including breakwaters, warehouses, wharves and dredging; expansion of harbor facilities at Topolobampo, Manzanillo and Progreso. The Director of the Banco de México, Eduardo Villaseñor, recently estimated that Mexico could profitably employ no less than 2,500 million pesos in shipyard construction and harbor improvement over a ten-year period.

Some of the improvements planned for the harbors that handle foreign shipments are probably desirable, but it is not clear that an extensive program of port development and shipyard construction is economically justifiable in Mexico. It should be possible soon to buy ships abroad at low prices. Moreover, there is no reason to expect very much coastwise traffic in Mexico, for the principal markets as well as the main producing centers are located in the interior of the country and can best be connected by internal transport.

Post-war expansion of air traffic will undoubtedly call for the provision of new airport facilities in the larger cities of Mexico. The aggregate investment for this purpose, however, will not be very great.

Mining

Mining has been an important element in the Mexican economy since colonial days, although it hardly brought prosperity to the country as a whole. Her silver resources gave rise a long time ago to the impression that Mexico is "a rich country." This belief is still to be found, both in Mexico and abroad. It is utterly misleading. Mexico, at best, has mediocre natural resources of the kind needed to promote her economic development—such as coal, iron, farming land and forests.

Before the war, Mexico ranked first in world silver production, and second in lead output. Copper and zinc were produced in significant quantities, and a wide range of other metals in lesser amounts. The wartime demand for strategic minerals stimulated Mexican mining, and new developments were opened, notably in copper. The production of non-ferrous metals in Mexico is much more likely to decline than to expand. Although Mexico may be able to keep her output of some of them at wartime levels, new investment in their production is hardly likely to occur. Only in iron mining is there apt to be post-war expansion and further investment. For example, the Mexican subsidiary of Bethlehem Steel Company, the Compañía de Minas de Fierro Las Truchas, is reported to be planning to invest \$25 million in the development of iron deposits and collateral projects in western Mexico.

Lumbering

In two extractive industries, of much less importance than mining to be sure, we may anticipate some post-war expansion: lumbering and fishing. In many parts of Mexico the forest cover has been excessively reduced by the use of charcoal for residential fuel, but there are some forest areas still virtually untouched. The most promising area for timber development is the high-elevation coniferous belt of Chihuahua and Durango. Because serious technical problems of exploitation and transport will have to be faced in this region, the resulting costs may retard the use of these resources for some years. However, they are likely to become an important long-run source of lumber supply for domestic consumption (and possibly for export to the United States) provided that they are exploited on a sustained-yield basis. The need for an effective government policy to prevent excessive cutting and denudation of Mexico's remaining forest cover is recognized, and we may expect further legislation on this question, as well as a more active enforcement of the existing laws.

In the coastal lowlands of Veracruz, Tabasco and Campeche, tropical hardwoods have long been exploited. The future of the Mexican hardwood industry, however, is not a promising one. The most accessible areas have already been thoroughly logged, and post-war competition from other countries will probably find the Mexican producers at a disadvantage.

Fishing

The fishing industry in Mexico has thus far seen little development because the prices for marine products have been very high in the interior markets, due to lack of suitable transport, refrigeration, and packing facilities. Good fishing resources are reported on both sides of Mexico. During the war Mexican capital for the first time showed a real interest in the industry. It is safe to forecast post-war expansion. In the first instance this probably means the establishment of more canneries, producing for export as well as for the internal market, but in time it should also be possible to extend the domestic consumption of fresh fish.

Land Reclamation

Irrigation and drainage projects should figure prominently in the future economic development of Mexico. In 1940, a six year irrigation program was adopted. Actual performance, however, has fallen far short of the goal set at that time, due to the difficulty of getting equipment from the United States during the war and the lack of systematic planning by the National Irrigation Commission. The Mexican-American Commission for Economic Co-operation anticipates an expenditure of \$158 million for irrigation in the years 1945-1950. Presumably, the specific projects included in this total were not covered by the earlier six year program. Certainly, the plans ex-

amined by the Commission do not exhaust the list of feasible irrigation developments in Mexico. Further projects will undoubtedly be undertaken. However, they will probably proceed at a much slower pace than those now contemplated, because the capital outlays required are apt to be considerably higher in relation to the returns expected.

PROBLEMS OF INDUSTRIALIZATION

The preceding pages have examined the principal economic trends in Mexico during the war period, and surveyed plans for further development in the next five to ten years. The striking feature about Mexico today is industrialization. For the future, even greater industrialization is being planned in a highly optimistic spirit. To the enormous outburst of optimism concerning the industrial future of Mexico, businessmen as well as government officials are giving support. In this environment, however, too little attention is being paid to important problems that are likely to arise as Mexico continues to industrialize at a rapid pace.

Need for Expanded Domestic Market

A program of industrialization in Mexico cannot be successful unless the domestic market is capable of absorbing the expanded output of manufacturing establishments, for Mexico cannot count upon being able to export more than a small fraction of her industrial production for some time to come. Exports to the Central American and Caribbean republics may one day attain significant proportions in various lines of manufacture. Such a development, however, must be ruled out for the post-war period, on two counts: first, some light consumer goods industries similar to those found in Mexico are likely to be developed on an expanded scale in these other countries after the war; second, Mexican firms will be unable to compete abroad in many lines of manufacture with producers in the more advanced industrialized countries of the world.

The nature and size of the internal market, therefore, are questions of vital importance for Mexico as the country starts along the road to modern industrialism. As manufacturing expands, the industrial wage-earning group itself will consume larger amounts and a wider range of industrial products. The principal potential market, however, must be found in the farming population, which is generally estimated to include from 70 to 80 per cent of Mexico's 20 million inhabitants. But most of the farmers are engaged in essentially self-sufficient agriculture, and they are largely, or even wholly, out of touch with the nation's commercial framework. Their purchasing power and their living standards are low.

To North American eyes, standards of living in Mexico appear abysmally low. But it is not necessary to make comparisons with the United States or Canada, in order to show how depressed the Mexican standards

really are. Actual food consumption has been compared with theoretical minimum standards laid down by the National Council of Nutrition of the Mexican government, based on calorie requirements. The comparison "shows that the average daily income of a rural worker in Mexico falls about 30 per cent short of the cost of the minimum dietary needs of his family, let alone of its other basic requirements, such as housing, clothing, medical attention, and the like." (Soule, Efron, and Ness, *Latin America in the Future World*, p. 25.) Among many Indian groups, food consumption is reported to be 60 to 80 per cent below the minimum. For them, as one Mexican authority puts it, "hunger is endemic."

Problems of Raising Farm Buying Power

To convert the potential rural market for industrial products into an actual one, Mexican farmers must have cash income and their standards of living must be raised greatly. Such conditions require important changes in the Mexican agricultural picture. Farming must be turned more toward commercial production, and it must be integrated into the modern part of Mexico's economic structure. Moreover, agriculture must be improved as to methods (rationalized), in order to attain higher levels of productivity. It is true that these developments have been going on. But they have been slow. The big question which Mexico must face is whether they can be speeded up enough to sustain the current and prospective rate of industrialization.

The need to modernize Mexican agriculture is thus a pressing one. But here we encounter obstacles in the traditions and customs of the rural population. In Mexico, as Carl Sauer has pointed out, "the continuity with ages long gone is fundamental." Whatever its racial composition, rural Mexico is overwhelmingly Indian with respect to ways of living. Customs that have persisted since the days before the Spanish conquest are obviously stubborn in resisting change. The natural bent of the Mexican farmer, therefore, is to raise the traditional crops and to employ the traditional methods of cultivation.

Food habits, too, tend to restrict crop diversification. The rural Mexican traditionally eats mostly corn (in the form of tortillas), beans and chile and devotes most of his land to these crops. Such food preferences do not change easily. These food habits, as well as lack of cash income, make the typical Mexican rural diet a poor one from the standpoint of promoting working efficiency. The diet is deficient in quality as well as in quantity. Meat, eggs, milk, fresh vegetables, fruits and fats are rarely consumed, if at all. They are scarcely desired. Some Mexican authorities believe that the dietary habits of their country are the worst in the world. This may not be true, says Eyler Simpson, author of *The Ejido*, an intensive study of Mexican agrarian problems. "But," he goes on to say,

certainly it is true that even if the Mexican peasant were able to fill his stomach each day with all the tortillas, frijoles and chile it would hold—an assumption which is far from being always and everywhere true—he would still be malnourished, for these articles simply do not contain the fats, sugar, and other energy-giving and growth-producing substances necessary to health and well-being. (Page 264.)

Industrialization itself, by creating a larger market for agricultural produce, will stimulate improvements in agriculture. But this will not be sufficient. The Mexican Government will undoubtedly find it necessary to embark upon a program of agricultural education that promises to be more effective than any so far undertaken, and to adapt it carefully to regional conditions. It would be sound policy, too, for the government to encourage the production of chemical fertilizers and farm equipment in its industrialization program. The experimental work in seed selection and other methods of raising agricultural returns now being carried on co-operatively by the Mexican Government and the Rockefeller Foundation will undoubtedly be continued. Further aid to Mexico in the development of both experimental work and agricultural education may be expected from the Food and Agriculture Organization of the United Nations. For most of Mexican agriculture, improvements which increase yield per acre would be more important right now than those that increase output per man, although both are desirable. In corn, beans and wheat, Mexico's yields are reported to be among the lowest in the world. Improvements, such as dusting beans to check the bean beetle, might be introduced quite rapidly.

The economic forces set in motion by industrialization will doubtless affect the land reform program which has been going on since 1915. The time-honored propensity of Mexican farmers to engage in self-sufficient agriculture has actually been reinforced by agrarian reform, primarily because the average holding has been too small for commercial production. Not even government subsidies and liberal credit terms have been successful in promoting the modernization of agriculture in recent years, although these methods might be very effective in another setting. The whole agrarian question in Mexico is a very complicated one, from the social and political viewpoint as well as the economic. It is not necessary here to attempt to evaluate the achievements of the various agrarian reform measures, but this much seems clear—that the agrarian program must now be viewed and re-appraised from the standpoint of an integrated process of development, including industrialization. I do not mean by this that industrialization should be a substitute for an agrarian program—an opinion that seems to be gaining headway in Mexico. On the contrary, the two must proceed as complementary developments, for a program to advance the social and economic position of the rural population is a prerequisite to healthy industrial expansion in Mexico.

In all probability, important changes will be necessary both in the content and in the administration of the agrarian program. With respect to this problem, it must be recognized that administrative reform is likely to encounter a real "bottleneck" in the existing corps of agrarian politicians.

It might be argued that the purchasing power of Mexico's agricultural population can be increased by opening new lands to crop-raising, for this would permit larger average holdings and thus facilitate the introduction of more efficient methods. To some extent this is possible. But neither in amount nor timing could it solve the problem of the inadequate buying power of the rural inhabitants. Mexico as a whole is poor in farming land, thanks to unfavorable climatic, slope or soil conditions. Less than 25 per cent of the total area of the country is considered arable. The bulk of the Mexican population is concentrated in the southern part of the central plateau, where steep slopes and soil erosion will scarcely allow an increase in crop acreage. To the north and northwest, some opportunities for additional irrigation can be found. As we have already observed, the Mexican Government plans to take advantage of them. The heavy costs of such projects, however, will probably cause them to be spread over a number of years. Thus, they can contribute little to the solution of this particular problem.

The best undeveloped agricultural resources of the nation lie in the humid plains along both coasts. Climate, topography and soils combine to make the coastal plain along the Gulf of Mexico potentially a great producer of maize for domestic consumption as well as other crops for export. The area, however, offers some pretty serious obstacles to development—notably, malaria and other tropical diseases, and the problem of clearing the native vegetation. Heavy outlays will be needed for sanitation and other purposes before this region can be effectively and wholesomely developed. In the meanwhile it will probably receive small groups of immigrants from other parts of Mexico. It remains to be seen, however, whether large numbers of dwellers of the central plateau will be able to settle quickly and to remain in the tropical plains under existing conditions. There is certainly a strong presumption in favor of the opinion that it will take many years for this region to realize its agricultural possibilities.

This brief review suggests that there is a very real danger that the purchasing power of Mexico's agricultural population will be inadequate to support the industrial development now proceeding or planned for the post-war period. Effort in agriculture must be concentrated upon the difficult job of commercializing and rationalizing operations for the bulk of the farmers, with little help from the opening of new areas. It will be necessary for the Mexican government to attack the problem on a number of fronts—size of holdings, credit, establishment of additional farm machinery centrals, use of fertilizers, experimentation with and introduction of im-

proved varieties of crops and adopted livestock strains and changes in crop economy, and above all, vigorous extension of improved methods to farmers. While such developments have not been neglected it is necessary to intensify them, speed them up greatly, and fashion them into a more integrated program than has thus far emerged. The problem is a knotty one. But if it is not solved, Mexico is likely to find herself with a badly unbalanced economy—with an industrial capacity far in excess of what her market can absorb.

Labor

Other potential "bottlenecks" in the program of industrial development are less important than the inadequate buying power of the agricultural population. Deficiencies in industrial skills might become serious here and there, and a broad program of vocational education seems indicated to cope with this problem. Technical, scientific and managerial personnel will also be needed in greater numbers than Mexico is able to supply at present, but foreign specialists can fill this gap while more Mexicans are being trained at home and abroad to provide such services. (And it is a certainty that Mexicans will in time take over most of the salaried technical and administrative jobs in industry.)

Capital Needs

A more critical issue may arise out of Mexico's balance of payments in the post-war years. The foreign exchange provided by her exports, such as minerals, may not be adequate to cover the purchases she would like to make of capital equipment for industrial, power, irrigation and transport development. Substantial foreign exchange reserves have been accumulated during the war years, but inroads are already being made into these reserves. It is generally agreed in Mexico that steps will have to be taken in the post-war period to use foreign exchange resources effectively from the standpoint of national economic development. The policies adopted for this purpose will obviously depend upon a number of circumstances, of an international as well as national character. However, insofar as Mexico will have to choose between importing consumer goods and capital goods, it is quite clear that preference will be given to the latter. Thus, pressure on the balance of payments will be relieved by reducing imports of various kinds of articles destined directly for final consumption.

The problem of securing capital for industrial and other development is not apt to be a serious one. Some of the "refugee" capital that has gone to Mexico since the outbreak of the war in 1939 will remain in the country indefinitely. For some years, American capital has been timid about investing in Mexico, largely because of the land-reform program, labor laws, and the oil expropriation incident. But wartime co-operation between the

two countries, especially as expressed in the work of the Mexican-American Commission for Economic Co-operation, has done much to establish a working basis for the further investment of American capital. Another possible source of capital is the new International Bank for Reconstruction and Development.

It is doubtful that very much foreign capital will be considered necessary in Mexico, in view of the growing ability of the country to mobilize its internal savings for investment in channels that will effectively promote national economic development. For many years the small percentage of the Mexican people whose incomes enabled them to make savings showed a strong preference for using their funds in urban real estate development. Nowadays they are finding investment in industry to be likewise attractive. As industrial concerns establish their earning capacity a growing proportion of savings can be expected to flow into industrial investment. Moreover, it is quite possible that the construction of more office buildings, apartment houses, hotels and mansions in the Federal District and other large cities will be discouraged by public policy.

Mexico's banking machinery, too, is ready to support industrial development. Private investment banking institutions and the semi-official Nacional Financiera should be able to expand their advances of capital for the establishment of industrial enterprises, inasmuch as the Banco de México seems to have considerable latitude and willingness to back up such advances. Direct public investment in industries considered essential to the national welfare can also take place through the Federal Commission for Industrial Development. This organization, however, may actually do more to reinforce and extend the operations of Nacional Financiera than to set up industrial establishments itself.

With respect to the role of public investment and central bank financing in the economic development of Mexico, it is encouraging to observe that the Mexican public has recently shown some signs of willingness to purchase government securities, such as highway bonds. Further spread of this habit would be wholesome, for it would help to reduce the inflationary effects of new investment in Mexico. It cannot do much, however, to curb the striking inflation already under way.

Inflation

The Mexican price level (at wholesale) almost doubled between 1940 and 1945 and continued to rise in 1946. The economic and social heritage of wartime inflation will carry on for some time. The Mexican price structure has risen much faster than price levels of the United States and other industrialized countries such as England and Canada, but many other Latin American countries have suffered similar inflation. The reduced buying power of wages, and the struggles over wage readjustments to make up for

the price inflation, are natural consequences of this wartime and post-war inflation.

CONCLUSION

We must refer again to the danger that the internal market in Mexico will be unable to support industrialization at current and prospective rates of expansion. It is indeed questionable whether technical and organizational rationalization of agriculture will be able to bring about a major increase in rural purchasing power in the short-run future. If a significant excess industrial capacity should appear in the post-war period, the pressures for new and increased protection from foreign competition may well be politically irresistible. The cry "dumping" was heard in Mexico and other Latin American countries as soon as the easing supply situation in the United States permitted larger exports of a number of commodities. Similarly, there would be a strong demand for the government to continue tax-exemption privileges indefinitely and perhaps to extend large amounts of credit to industrial firms to maintain a partly unsound industrial structure at public expense. Moreover, the use of funds for this purpose would probably cause a significant reduction in public outlays for agricultural, irrigation, power and transport development. These, as we have seen, are not only needed in their own right, but they are basic to a healthy industrialization of Mexico.

In the event that the dangers of inflation should force a reduction in aggregate spending in the near future, it would be unwise for the Mexican Government to continue its support of industrialization at the expense of the other fields of development just indicated. In the long run, the outcome might be the same no matter which policy is chosen. In the next five to ten years, however, unstable economic conditions might result from a strong pro industrialization policy, and the social and political tensions that have been fostered by inflation and other wartime circumstances would naturally become much stronger.

It cannot be said that the Mexican Government has already gone too far in encouraging industrialization. But it is clear that the time has come for the Government to take stock, to examine the implications and potential dangers of current rates of development in the various branches of the economy, and to decide whether it should be more selective in promoting industrial development than it has been in the past few years. In making such an appraisal, it is highly important that full weight be given to the contribution which highway and power development can make to the Mexican economy, and, above all, to the need for an agricultural program that will effectively raise productivity, expand cultivated acreage, and increase the buying power of farmers to consume what the new plants will produce.

THE WEST COAST OF SOUTH AMERICA

by EUGENE MAUR BRADERMAN

The economic frontier of South America's west coast is relatively unexplored and possesses vast potentialities for future development. But careful planning is necessary lest unguided productive enterprise create prosperous islands in a sea of poverty and want.

The west coast of South America is in a stage of industrial and agricultural development roughly akin to the United States in the 1870's. Since the time of the Spaniards, the west coast countries have been engaged in the extraction of raw materials without regard to the needs of the domestic economy. Each country depends on one or two export products—a flimsy foundation for a sound economy. Chile has looked to copper and nitrates; Peru to petroleum, cotton and sugar; and Ecuador to cacao and coffee. Productive efforts have been limited largely to raw materials for export. It has been essentially a colonial economy.

But it need not be so. The raw material and human resources of the west coast countries can be effectively marshaled to produce an ever-rising standard of living. Industry, agriculture, trade and technology can be the tools by which the millions of citizens in these countries can develop their economic organization to guarantee "freedom from want."

IMPACT OF THE WAR

After Pearl Harbor, the development and production of raw materials for the United Nations reached a momentum never before equaled. The United States needed vitally important commodities to supply wartime requirements and replace losses in the Far East: more copper and nitrates from Chile; balsa and quinine from Ecuador; and copper, tungsten and rotenone from Peru. In 1944 our imports from Chile and Ecuador were nearly four times the 1939 dollar total; and from Peru, nearly twice prewar.

The expansion in production was supported by the extension of highways and air transport, by the partial rehabilitation of certain key rail lines, and by a health and sanitation program to make workers healthier and more productive. In some areas, local industries were established or ex-

panded to replace import losses and to meet consumer demands at home. Although part of a war economy some of the productive capacities can be utilized for post-war objectives.

The stimulated wartime industrial activity and the high level of employment with increased wages were accompanied by restricted imports of consumer goods. This resulted in an almost unbridled inflation, which was further aggravated by widespread speculation. Governmental efforts to control this inflation were generally ineffective. By V-J Day, internal price levels ranged from 1.8 times 1939 in Peru to 2.6 times 1939 in Ecuador. Each country is now faced with a dislocated economy, a diminishing market, increasing competition in the sale of its products and a fall of internal prices as imports increase.

The United States followed the policy of withdrawing from public purchase as soon as possible after the war. In countries dependent almost exclusively on one or two export commodities, this policy has had serious effects. In Chile, the cutback on war-inflated demands for copper can play havoc with the whole Chilean economy. Means will have to be found, not only to lower the cost of copper through even more efficient methods of production, but to direct the country's productive capacity into more diversified fields. Similar efforts to counteract the effects of the conditions brought about by the war and its termination will have to be made by both Ecuador and Peru.

Financially the west coast countries fared rather well during the war. Increased demands for their products and a decreasing ability to import goods to fill their needs led to the accumulation of sizable gold and exchange holdings. Chile's reported gold and exchange reserves increased from approximately \$40,000,000 in 1939 to \$110,000,000 at the end of the war, and Ecuador's from \$3,000,000 to \$34,000,000. Peru's holdings increased less sharply from about \$20,000,000 to almost \$35,000,000.

Since the end of 1945, however, the holdings of all these countries have decreased primarily because of larger imports. Despite this decrease there are indications that these countries intend to husband a considerable portion of this gold and foreign exchange for economic development in the post-war period. Import controls and exchange restrictions have been either instituted or strengthened for this purpose. The governments want to channel these funds into the purchase of goods for long-range development instead of having them dissipated by heavy purchases of consumers' goods and luxury items.

POST-WAR NEEDS FOR CAPITAL GOODS

With the outbreak of World War II the accomplishment of long-range development programs had to be postponed because imported equipment

and technicians were no longer available. The unsatisfied requirements which already existed in 1941, plus the very limited imports of the war years, have created a great need for capital goods. Capital equipment was given heavy usage during the war, frequently with inadequate repair causing intensified depreciation and obsolescence.

Assuming favorable economic conditions, it is possible to estimate the demand in the west coast countries for capital equipment and foreign investment. These favorable conditions include a reduction in trade barriers, the maintenance of stable currencies, a high level of employment in large industrial countries, the pursuance of sound fiscal policies, and the adoption of a cordial attitude toward foreign capital and foreign technicians and entrepreneurs.

The west coast countries need equipment to develop power and communication lines for building construction, industrial plants, and transportation facilities. They will require machinery for expansion in the fields of agriculture, mining and petroleum, lumbering and fishing. They will want scientific apparatus and consumer goods. Each country will be able to make a portion of these things; for the remainder, they will have to shop abroad.

Chile, more advanced in industrial development than the other west coast countries, will be able to provide somewhat less than one-half of her post-war requirements for equipment, both new and used. The country's total needs have been estimated at about 745 million dollars. Peru's requirements have been estimated at about 430 million dollars worth of new plant and replacement equipment; Ecuador's at about 145 million dollars. For these two countries, only about thirty per cent of the total can be supplied from domestic sources. Altogether, the three countries need 1,300 millions of dollars' worth of equipment in the next ten years, of which perhaps 750 millions will have to be imported.

INDUSTRIALIZATION, PRESENT AND FUTURE

Sound economic development implies a balanced utilization of agricultural, pastoral, forest and mineral resources, as well as the development of transportation facilities and manufacturing industries, in harmony with a country's natural resources, its geographic and climatic characteristics, and the technological abilities of its people. No country should strive for economic self-sufficiency, nor should every country follow the same pattern. A balanced development should provide maximum productivity and levels of living by making economic use of those resources in which a country has a comparative advantage, with gradual and progressive development as experience, technology and capital accumulate.

Plans for individual enterprises also must be sound, including only those which under domestic and foreign competition, and without excessive tariff

protection or special governmental favors, can produce goods and services in quantities and qualities which yield fair returns to capital, labor and management.

If Chile, Peru and Ecuador are to obtain full benefits from foreign investment certain standards must be applied. They must control the loans to see that foreign investments will not compromise their international economic position, and yet must protect the investors. Private investment by foreign corporations or individuals should be encouraged particularly in co-operation with local investors. This will minimize discriminatory legislation and help prevent nationalistic opposition or expropriation. As in the United States, investment should be accompanied by as full disclosure and publicity as possible. Rates of interest and financing charges should be reasonable and periods of amortization adjusted so far as possible to the nature of the project and to the economic and financial strength of the borrower and the country in which the project is located.

TECHNICAL ASSISTANCE

The Latin American countries look to the United States for technical as well as financial assistance in speeding up their economic expansion by availing themselves of the modern techniques practiced in the United States. Specialists can help these countries to realize the potentialities of their undeveloped industries, and Latin-Americans can come to this country to see at first hand the results of modern American scientific research.

Some work in this field is already under way, and other projects are under discussion. Projects under way include lending technical American experts such as geologists, engineers and agronomists; training young Latin American students in methods in use in the U.S. by government in such fields as rural electrification, and by industries such as canning and iron and steel manufacture; placing Latin American students in technical institutions in the U.S., and sending a mission of experts on fisheries to advise the Chilean government on better utilization of her marine resources.

INTER-AMERICAN AND NATIONAL AID TO DEVELOPMENT

The United States should continue to cooperate with Chile, Peru and Ecuador in their efforts to create and maintain those conditions for sound development. On their part, the West Coast countries should recognize that economic development presupposes just and equitable political and fiscal treatment, including equality of treatment for foreign capital and personnel, and liberal international trade policies. It is clearly their responsibility to maintain conditions that are favorable to the investment of capital, whether foreign or domestic, in productive enterprises; the development of skilled labor, including the immigration of that labor; and the flow of goods both in domestic and international trade.

There has been a growing trend toward government intervention in the economies of the west coast countries, including tariff protection, exchange and quota controls, the establishment of government monopolies and the formation of government corporations and agencies engaged in diverse phases of each country's economic life.

Unfortunately government intervention in Latin American countries has often paid only lip service to the needs of the whole economy. Too often the establishment of a government undertaking, though ostensibly directed toward meeting a general need, has in fact operated to serve the interests of a few. Many government enterprises have become political footballs or have been used to provide lush jobs for those in power. The machinations of groups intent on building up a large bank account during their term of office have often prevented the fulfillment of the laudable aims and purposes to which an undertaking was dedicated.

Development corporations have been organized by the Governments to provide for the long-range expansion of domestic industry.

Chile's Development Corporation was created in 1939 following a disastrous earthquake. It is controlled and financed by the Chilean Government with some help from the U.S. Export-Import Bank. The Corporation's program includes projects in electrification, transportation and the distribution of agricultural machinery, in addition to aiding numerous mining and manufacturing enterprises. By 1945 its investments totaled \$40,000,000. Increasing stress is being laid on large business ventures which are beyond the reach of private investment, so as to eliminate the danger of competition with private initiative.

The Ecuadoran Development Corporation, established in June 1942, was largely financed by the U.S. Export-Import Bank, with joint participation of both Ecuador and the United States in its operations. The Corporation has projects dealing with the cultivation of such crops as rubber, cinchona and cacao, the establishment of a central Agricultural Experimental Station, the construction of a highway, the study of an irrigation project, stimulation of the production of insecticides and other such endeavors. Total loans to the end of 1945 were \$5,000,000.

Future prospects for the Corporation, however, are not altogether promising. Its prospects could be appreciably brightened if Ecuador would finance its operations with less dependence on loans from the U.S. Export-Import Bank.

Direct participation by any governmental agency in the development of the economy of Peru has been less comprehensive. Rather development on a regional or industry basis has been undertaken. The Peruvian Santa Corporation, a dependency of the Government, most nearly approximates the Development Corporations of Ecuador and Chile. The Santa Corporation has been at work on a program to industrialize the Santa River Valley, de-

velop the port of Chimbote, and construct a hydroelectric power plant in the Cañon del Pato. The successful completion of these projects by the Corporation should lead to further activity on a broader scale.

A word of caution should be added here. There is a danger that too much reliance may be placed on Government action alone for the solution of all economic problems. Actually there is no easy way out, no panacea for all economic ills. The initiative of private enterprise and of individuals must be stimulated and governmental participation limited to those fields in which private capital is reluctant to enter but which are nevertheless vital to the nation's development.

MANUFACTURING AND MINING

Chile:

Copper and Nitrates. The exploitation of the immense deposits of copper and nitrates has been the chief support of thousands of families in northern Chile, and the source of the major portion of foreign exchange. For some years Chile has been trying to diversify production to extricate its economy from dependence on copper and nitrates. But the shackles imposed by the current position of nitrates and copper still closely bind the Chileans.

Wartime demands for Chile's mineral resources kept her mines operating at peak levels of production. The country may soon face a declining market for copper. The preference policies of Great Britain and Belgium have tended to assure producers in their African colonies of adequate markets and may prevent Chilean copper from competing in those markets. U.S. tariff policy also adversely affects Chilean sales prospects. Further, technological developments may displace copper in a number of uses.

However, Chilean production costs are lower than in many other producing areas, and about nine-tenths of the output comes from U.S.-owned and -operated companies, with facilities for processing copper in the U.S. duty-free for marketing abroad.

Chile possesses the only known commercial deposits of sodium nitrate. Since the first World War, however, synthetic and by-product nitrogen have been produced and sold in world markets in much larger quantities than the Chilean product. During World War II increased United States needs served to revitalize the Chilean industry but this situation was temporary.

The Chilean industry is confronted with the possibility of losing part of its market in the United States, which greatly expanded its synthetic nitrogen facilities during the war. Ammonium nitrate now sells in the U.S. market at a lower price than Chilean nitrate per pound of nitrogen. During the war the United States Government subsidized the importation of Chilean nitrate to the extent of about \$20,000,000 in order to maintain imports and permit nitrate sales at ceiling prices. However, this subsidy has ceased.

Thus, Chile must soon turn her attention to other commodities rather than hope for salvation for her nitrate industry.

Manufacturing. Chile has a number of characteristics which are favorable to industrial growth. The country has developed sources of many other raw materials, including coal, iron ore, sulphur, manganese and molybdenum; wool, timber, fish and farm products. There is a relatively large and cheap labor supply; potentialities for power installations; and most of Chile is close to cheap ocean shipping lanes.

The small population of Chile, just over 5,000,000, eliminates the possibility of mass production of most products for the national market, and the low purchasing power of the population hinders industrial development. There is a lack of trained and experienced technicians and skilled labor; and the efficiency of the Chilean worker has been reduced through widespread malnutrition and disease. Other handicaps are the absence of established, efficient heavy industries as a nucleus for rapid expansion, the limitation of available capital, the lack of roads in some parts of the country and the relatively high fuel costs.

Some Chileans think that their country should immediately undertake to develop an almost complete economic self-sufficiency, using tariff protection, import licenses, exchange control and other means for limiting imports. Despite the popularity of this view in Chile, it would be wiser to temper the speed of industrial growth by relying upon savings and increased progressive taxation to finance the desired industrial expansion. In this way, the danger of entering into uneconomic lines of production would be reduced and more time would be allowed for acquiring the technical knowledge essential to successful operations. Furthermore, Chileans should keep in mind the dangers of carrying their efforts for economic self-sufficiency to extremes, for only through participation in international trade can Chile keep her proper place in the political and economic world picture or build up a high domestic standard of life.

In 1940, about 116,000 persons were employed in 4,169 principal manufacturing establishments. Most of the industry is carried on in Santiago, although Valparaíso and Concepción are fast growing in importance as manufacturing centers. The principal products are foodstuffs, beverages, textiles, chemicals, leather and leather goods and metal products. Most Chilean manufacturing has been on a small scale, however, and the costs of production have been relatively high.

Chile's hopes for petroleum in commercial quantities now seem near realization. Late in 1945 an oil well at Springhill, Tierra del Fuego, brought in a natural flow of over 6,000 barrels a day. An additional well is now being drilled in the area to determine the magnitude of the oil bearing structure, and other drilling is in progress on a new structure on the mainland.

Yet, until these deposits have been more fully exploited, and because her coal is low in quality and high in cost, Chile must look to hydroelectric power to foster economic development. Progress in electrification was retarded by the war, but steps are being taken to speed its growth. The Development Corporation has initiated plans for increasing the production of electricity by fifty per cent, with more in the offing, and its work is already under way. The largest projects are the Sauzal Power Plant on the Cachapoal River above Rancagua; the Abanico project on the Laja River in South Central Chile; and the Pilmaiquén Power Plant on the river of the same name in the province of Valdivia. The power produced by the new plants will be used for electrifying additional portions of the State Railways, and for furnishing power for industrial establishments, for farms and for household use.

Chile's manufacturing industries were expanded during the war to meet the domestic demand for products which had formerly been imported, such as certain textiles, foodstuffs and chemicals.

Chile's factories do not have to be reconverted, and her manufacturing industries have not been affected by abnormal expansion. The task of getting industries retarded by wartime shortages of materials back to normal operations will be accomplished as the necessary equipment and raw materials become available.

With the expansion of electrical power, Chile can consider new industries. A small, efficient steel industry is possible, for Chile has excellent iron ore, some available coal and a good labor supply. The construction of a plant at Concepción, near coal mines and prospective sources of electric power, will provide low cost assembly of basic raw materials. Despite the limitation of a small available market, there should be a demand for upwards of 100,000 tons of simple steel products which this industry could provide, such as sheet steel and tin plate, lighter structural shapes, household equipment and the simpler farm implements. Later, heavier mining and road-building machinery could be produced.

A small copper fabricating industry already exists in Chile. With abundant raw materials and cheap electric power, the industry could be expanded so that sheet, wire, and other fabricated copper products would no longer have to be imported. Work is under way on the construction of a domestic copper smelter at Atacama, as well as on an electrolytic refinery.

For many years Chile produced a wide range of chemical and allied products in small amounts. Not until 1936, however, did considerable expansion take place. By that time Chile produced one-quarter of its industrial chemical needs and even more of its requirements of medicinal and toilet preparations. By 1940, after the advent of the Development Corporation, investments were made in new industries like those producing dyes, essential oils and various other chemical products.

An example of what can be accomplished with native materials is that of the crude drug digitalis, which grows wild in Chile. Until 1941 the drug was imported from Europe. Now Chile produces her own. In the same way, there has been a gradual decline in imports of paints and varnishes as the domestic industry has grown.

The potentialities for the future development of the chemical industry in Chile are broad. There are possibilities for the expansion of electro-chemical facilities, installation of coal carbonization ovens, utilization of woods in the production of methanol and similar compounds, and the subsequent combination of many of these into plastics, explosives and scores of other basic chemicals.

The lumber industry, too, is capable of considerable expansion. Wooden products for domestic use and for export to Argentina and other neighboring countries could be produced from the large quantities of timber which are available. Better roads and modern logging equipment will be needed, however, before this industry can make any substantial progress. Plans have already been made and some work started on various aids to the industry, including the construction of saw mills, impregnating plants, enlarged facilities for the production of plywood and a factory for the manufacture of cellulose. In addition, the recommendations of the American forest mission in Chile are expected to assist materially in the improvement of the operations of the lumber industry.

The canning and dehydration of foods is another field into which Chilean industry could expand. With the acquisition of modern fishing boats, cold storage facilities, refrigerated cars and technical skills, Chile's fishery resources could be better utilized to furnish a badly needed substitute for meat in the people's diet.

Public Works. In order to meet its pressing over-all economic problems, Chile inaugurated a new phase of its development program in January 1945—a six-year plan of public works to cost \$100,000,000. The plan envisages irrigation and land improvement, and the construction of highways and bridges, railway works, sanitation projects, port works and sport facilities. A large portion of the funds, however, are to be derived from the tax on the copper industry. Should this source of capital dwindle, the program may fall short of its ambitious aims because of inadequate funds.

Summary. How to meet peacetime foreign competition is Chile's chief long-range problem. Increasingly available imports are rivaling Chile's manufactured goods in price and in quality. A number of high-cost industries, developed behind tariff walls, and often dependent on imported raw materials, will find this a difficult challenge to meet. If Chile would concentrate her industrial energies only on those enterprises best suited to her natural and human resources, this problem would be less serious.

In Chile, as in other South American countries, industrial expansion will

depend largely on the growth of domestic markets through the increased purchasing power of the people. This can be accomplished mainly by the further development of the agricultural, pastoral and mineral resources of the country. In order to attain stability, Chile will have to escape from her present reliance on the variable world demand for copper, nitrates and some agricultural products. New industries, which take cognizance of Chile's special capacities for production, are needed if standards of living in that country are to rise.

Peru:

Manufacturing. Peru's manufacturing industries, with few exceptions, are based on the conversion of domestic raw materials and imported semi-manufactures into consumers' goods almost entirely for domestic consumption. The most important manufacturing industry is the fabrication of textiles. In addition, Peru produces various beverages, processed foodstuffs, tobacco products, paper and paper products, rubber goods, light metal articles and furniture.

Unlike most Latin American countries, Peru did not build up large dollar or gold reserves with which to finance post-war purchases. In other respects, however, Peru seems to have been more fortunate than many other countries of Latin America. During the war domestic industries producing certain consumers' goods were able to capture a considerable portion of the markets previously held by imported merchandise. At the same time, war restrictions prevented too great an expansion of poorly suited new enterprises which might now require high tariffs and quota barriers to exist. The Peruvian Government discouraged the over-expansion of plant facilities in the production of textiles, hats, shoes and certain other products; so established enterprises were able to operate throughout the war at high levels and at attractive profit margins.

The problems with which Peruvian manufacturing industries are now confronted are not very different from those which existed before the war. Peru's well-established older industries will encounter about the same competition which they had before the war. With the reopening of foreign sources of imports, certain of the war-established industries, particularly those which produce light metal products, chemicals and pharmaceuticals, may have difficulty in meeting competition from abroad.

Mining. The outlook for Peru's mining industries is generally bright. Petroleum production will continue high and if the world demand continues at or above prewar levels, the mining of silver as well as copper, zinc and lead, commonly found in the same ores, probably can be expected to continue profitable operations.

In the past Peru has exported most of its mineral production, especially metals, in the form of crude ores, concentrates, or partly processed prod-

ucts. More recently considerable progress was made in smelting and refining operations. The fabrication and preparation of these metals for immediate consumption, however, has been very limited. Recently a silver refinery was built at La Oroya and a silver manufacturing industry came into being. Although only a small proportion of silver is now refined domestically, already the industry has given remunerative occupation to thousands of workers. The manufacture of other of the country's mineral products could do much toward improving Peru's national economy.

Public Works. An important step in the stimulation of industry in Peru has been the growth of electric power plants. Many of the country's water power resources are still undeveloped, however, and the work on Government-authorized projects, which was retarded somewhat during the war by the lack of materials, is now being renewed.

On May 24, 1945, the new port and sanitation works at Chimbote, about 250 miles north of Lima, were formally inaugurated. Under the sponsorship of the Peruvian Santa Corporation the area is being developed through a program of public works. Originally, provision was made for the construction of a steel mill with an annual capacity of 100,000 tons; but, since Peru's total annual consumption is only about 60,000 tons and her foreign markets are limited, some Peruvian engineers have disputed the economic practicability of the proposals. Although the steel project is still a lively topic for discussion, little progress has been made. Work has gone forward, however, on the building of modern harbor installations, rail reconstruction, housing, a hospital and school facilities. Chimbote will be the outlet for the Santa River Valley, where industry is being stimulated by the installation of a hydroelectric plant on the TVA pattern at Cañon del Pato.

The Amazon empire is another field for which Peru has ambitious plans. Iquitos, the largest city in the Peruvian Amazon, long isolated and undeveloped, was given new economic vigor by the demand during the war for rubber, rotenone, quinine and many other tropical products. A hospital and airport have been built. The Institute of Inter-American Affairs has provided valuable assistance on health and sanitation projects. Communications are being improved, and it is hoped that improvements in the area will attract tourist travel, as well as stimulate industrial activity. There appears to be an excellent chance that the post-war plans for this area will be carried out successfully.

Ecuador:

In Ecuador mining operations are largely dominated by American and British interests. Gold, copper, silver and petroleum are the principal products. The production of metals has recently declined. The mining companies hope to increase production by obtaining additional equipment from the United States, and by continuing their explorations for new ore sources

in the country. Active oil exploration also is being carried on further to expand the already increased production of petroleum.

Ecuador's industries are few in number and small in scale, but a number of them have been able, with tariff protection, to offer effective competition to imported commodities. The industries which utilize agricultural products are of particular importance to the economy of the country.

The production of textiles is the largest industry, although Ecuador is not yet able to meet even her own textile needs. In peacetime, the production of Panama hats has been a standby for farmers working in their own homes. Sugar refining is also an important industry even though there has been some discontent caused by the setting up a government monopoly of sugar production and distribution in 1944, which forces producers to sell at fixed prices.

Three smaller industries made some progress in recent years—the soap industry, the shoe industry, protected by a very high tariff and by a ban on the exportation of hides, and the chemical and pharmaceutical industry, which has been steadily growing. The domestic need for quinine and war-time purchases of cinchona bark by the United States further stimulated the latter industry.

Efforts have been made in recent years to develop Ecuador's manufacturing industries. However, as a result of the small domestic market, the dearth of developed raw materials and inadequate transportation facilities, progress has been slow. On the basis of present conditions it seems doubtful that Ecuador can support any heavy industries in the near future. Small industries must form the basis for industrial development by private firms, supplemented by government action in highway, railroad and air transport to enlarge the domestic market and to open new sources of production.

During the final months of World War II, Ecuador's government leaders realized that the exportation of war-stimulated products such as balsa, rubber, cinchona and rice would decrease with the conclusion of hostilities. In January 1945, a decree was therefore issued providing a plan for the development of the country's economic resources. Particular attention was to be given to the development of agriculture and industry, as well as to highway construction.

The first practical step was the allocation of \$6,500,000 for investment in the development of agriculture and industry with special emphasis on the construction of roads and other productive projects, with expenditures to be made over a period of three years. Approximately 80 per cent of the loan has been allocated for public works and the importation of implements. The remainder is to be used for the importation of machinery and equipment necessary for industrial, agricultural and livestock development.

Ecuador's immediate task is to get those industries whose activities were curtailed or shut off by wartime shortages back into production. Later it

should be able to diversify and expand its small industries, producing light consumer goods to meet domestic demands. Further development will be possible, however, only with increased capital for financing new enterprises, improved transportation facilities and a determination on the part of both the Government and the people to see the program through.

AGRICULTURAL DEVELOPMENT

With the exception of the Central Valley of Chile, and sugar and cotton production in Peru, most west coast farmers follow traditional methods, with no scientific knowledge of soils, plants and animals, diseases, production practices and marketing conditions. The job of development is tremendous and involves experiment and research, and the training and education of millions of producers. It also depends upon the improvement of transportation, processing and marketing facilities; on the establishment and extension of credit; and on wider land distribution.

The agricultural development of the area involves a long-term educational program, with no readily observable results to be expected within a short period of time. The contrast in this respect with specific phases of industrial development should not be overlooked; otherwise, the results of the first efforts to improve agriculture may seem disappointing.

A start has already been made. Experiment stations have been established in Peru and Ecuador by agreement between the U.S. Department of Agriculture and the Governments of these countries. Research projects have been undertaken relating to insecticidal plants, tropical food crops, livestock, plant pathology and broad problems in land utilization. Local technicians are being trained in both the theoretical and practical phases of farming.

Chile. Although Chile's international trade depends predominantly on the products of her mines, by far the larger part of her population is engaged in agriculture. The central zone of the country, with its dry summers and rainy winters, is the chief agricultural area. The principal cereal crop is wheat, but large quantities of barley and oats are grown, as well as smaller amounts of rye and corn. Chile grows her own potatoes and onions, while beans, peas and chickpeas are cultivated both for domestic consumption and export. Lentils are the only Chilean agricultural commodity grown almost exclusively for export.

The mild climate and plentiful water of the Central Valley have led also to the development of fruit growing. Chile produces a wide variety of temperate and sub-tropical fruits, and Chilean grapes are among the world's finest, not only for table use but also for the growing domestic wine industry.

In spite of the prominence of agriculture in the Chilean economy, the country does not satisfy its needs, even for commodities that could be pro-

duced economically. There are frequent wheat shortages and inadequate supplies of beef. While large portions of the population have only enough land to produce minimum food for themselves, large arable areas lie uncultivated each year. A wider distribution of the good land, plus mechanization and modernization similar to that of California or of Switzerland, could make Chile almost self-sufficient in food supply. Of course, the country does not have to grow cotton or sugar because these products are available in nearby Peru. But many crops must be planted and the production of others increased to provide a better diet for the people. Furthermore, an expansion in the cultivation of agricultural commodities would help to strengthen Chile's position in foreign trade. For instance, larger grape plantings could increase wine exports. Soybeans, too, could be grown, and alfalfa and clover plantings increased for hay and for soil improvement.

Chief among the obstacles which Chile faces in the development of her agriculture is the prevailing system of land tenure. Agricultural land is divided into a relatively few large holdings, and little progress has been made in agricultural techniques and utilization of the land. In addition there are the problems of competition between the cultivation of export crops and less profitable crops for domestic consumption; inadequate storage facilities which have restricted the growth of her mutton industry; and the lack of adequate transportation facilities. Also there are the questions of the increased exploitation of Chile's southern regions, particularly in the development of a well-organized cattle industry and the fuller utilization of her forest resources, not only for domestic needs but also for export. Greater capitalization on the advantages of her reverse seasons could make her fresh fruits and vegetables popular as out-of-season foods in the United States, Canada and Northern Europe.

Some steps have already been taken for agricultural development. The Agrarian Credit Bank provides credit facilities for the purchase of farm machinery and fertilizers, and the Bureau of Agricultural Colonization has been attempting to settle people on small farms. The National Agricultural Society, representing a number of private organizations, is interested in scientific agriculture. The Chilean Development Corporation has been concerned with the cultivation of new crops, the expansion of fruit culture, the increase of animal production, the construction of irrigation and drainage projects, the creation of rural electrification co-operatives, and the increased use of agricultural machinery and fertilizers.

In February 1944, a Chilean Commission appointed by the Government to study the post-war problems affecting national agriculture pointed out that Chile will be best able to safeguard its future economy if it keeps its cost of production at a low level. To do this every activity must be carefully selected, and the production of those articles and foodstuffs which have un-

til now continued solely on the basis of temporary high prices should be eliminated.

Four recommendations for the improvement of the agricultural system were made by the Commission: that agriculture should be adapted to the natural characteristics of each area; that mechanized equipment should be used to increase the efficiency of human labor; that the rural population should be educated toward the cultivation of the land and the urban population instructed in the nutritive value of the various products of agriculture; and that the urgent necessity for individual and collective effort be brought home to the people, many of whom are now out of the habit of work.

Early in 1945 an over-all agricultural plan was initiated by the Government to modernize Chilean agriculture through insuring the proper usage of lands, increasing irrigation systems, raising living standards and guaranteeing employment for farm workers. The plan was adopted despite opposition from groups opposed to planned agriculture. As a result of this opposition some of the more audacious aspects of the plan, such as that aimed at breaking up the large *haciendas*, will probably not be acted upon for some time if at all unless the left-wing elements dominate the political scene. Thus far the only concrete achievements have been the appointment of a council to direct the operation of the plan and the approval by the President of an expenditure of about one million dollars to carry out certain minor items, mostly of a technical nature.

Peru. The Andes; running northwest to southeast through Peru, divide the country into three regions. The coastal area is a stretch of desert land dotted by irrigated river valleys. The second region is the Sierra, made up of mountain chains, plateaus and valleys. The heavily forested eastern slopes of the mountains and the Peruvian Amazon Basin are known as the *montaña*. Because of inadequate transportation facilities, the agricultural system of the country is not well integrated.

The coastal area produces rice, one of the chief food staples of its population, and minor quantities of potatoes, various cereals, fruits and vegetables. Coastal agriculture, however, is devoted primarily to the cultivation of cotton, sugar and flax, the export crops.

Most of the Sierra is occupied by Indian communities, little influenced by outside contacts and still using primitive methods. The major part of the pastoral activities of the country are carried on in this area, especially sheep raising chiefly for the production of wool, a large part of the output being exported.

The *montaña* covers the largest area, but only in and around Iquitos is there any agricultural activity of consequence. Cacao, and the forest products, rubber, tagua nuts and barbasco, are its main commercial commodities.

Subsistence level production characterizes the agriculture of the area to a large degree.

The inauguration of the Agricultural Experimental Station at Tingo María in 1945 marked the opening of an exemplary attempt to integrate Peru's vast interior regions with the economy of the coastal region. The two primary objectives of the Station are to devise the best possible methods of exploiting the agricultural resources of the area, and to disseminate the knowledge as widely as possible. The Station has already had some degree of success in developing and adapting industrial crops to the largely undeveloped montaña area of eastern Peru, and has made some progress in improving the basic food situation of the area. However, Tingo María makes little contribution to the agriculture of the coastal and Sierra regions, where about seven million of Peru's seven and a half million people live.

Peru is working on a program to produce more beef and dairy products. In the Lima-Callao area, ten thousand additional head of beef cattle would be required each year to meet minimum consumption standards, and present milk production would have to be increased five times in that area to approximate per capita consumption in the United States. This would, of course, require far higher buying power for the people than they now have. Modern livestock quarantine stations have been constructed at Arequipa and Callao; improved stock and breeding animals have been brought into the country, both for experimental work and for private breeders; and extension agents have been sent throughout Peru to assist farmers in the selection of livestock, in the organization of breeding stations, and in cattle management.

Plans are under way for the further mechanization of Peru's agriculture. For instance, the development of the sugar and cotton industries envisages the use of sugar cane harvesters and cotton pickers. However, all changes in methods have to be adapted to the large Indian population whose agricultural habits represent the accumulated traditions of thousands of years.

The Government's current agriculture and livestock program seeks to produce more domestic food and so hold imports to a minimum and at the same time to create or expand export markets for such new or rejuvenated crops as flax, tea, barbasco, rubber and cinchona. The end of wartime restrictions makes it possible for Peru to import machinery and equipment necessary in clearing her great areas of jungle lands, and the Government is encouraging settlement there. Increased agricultural activity, however, will not alone be able to solve the food problem in Peru. Food production costs have risen more than retail prices of food, and the present wage rates make it impossible for consumers to pay more for food than they are already paying. The basic solution involves cutting production costs and improving distribution methods. Moreover, every phase of agricultural development in Peru hinges on improved transportation.

Ecuador. Ecuador's agricultural problems, though more serious, are similar to those of Peru and Chile. This country too needs expansion and diversification of its agricultural pursuits, education of the farmer, modernization of farm machinery for more efficient and low-cost production, and improvement in its transportation facilities.

Agriculture and forestry are the principal industries and source of livelihood in Ecuador. They also furnish the major portion of the exchange for the purchase of imports. In spite of this emphasis, however, the eastern region and the coastal area have few settlers and are little exploited.

The Sierra and the Guayas basin contain the largest areas of cultivated land. But the soil of the Sierra is being depleted; the land is showing the effects of erosion and intensive use to provide food not only for the concentrated population of the Sierra but for the coastal region as well. As portions of the soil become less productive, greater pressure is placed on the rest of the lands, to their further detriment.

Some of the lands of the Sierra can be improved by better irrigation methods and the use of fertilizer. The growth of new crops, adaptable to the land, should be fostered and better food packing methods should be introduced. Extensive cultivation of the mountain sides should be reduced, however, and attempts made to develop them as grazing lands for cattle and sheep. Encouragement should also be given to the development of other aspects of the meat and cattle industry.

The western coast of Ecuador, largely undeveloped, has virgin soils with high productive potentialities. The highways under construction, joining the coast with the Sierra, will stimulate the development of the region. But much more is needed. Forest lands must be cleared, new imported plant materials and selected native plants cultivated, health and sanitary conditions improved, technical and financial aid given to farmers, and industrial processing of agricultural products financed and encouraged where production warrants.

Unlike Peru, Ecuador is not yet ready to devote much attention to the sparsely settled eastern region, particularly if any significant development work is undertaken in the coastal area. Gradual colonization might be encouraged, but, in the main, it would be well to consider the land as a reserve, and apply the limited capital and the energies of the country to the development of the other two regions.

A Co-operative Agricultural Experiment Station, with the help of the U.S., is working primarily in the coastal region on the improvement of plant stocks, such as cacao, development of new export crops such as rubber and derris, and the improvement of local food production. The Ecuadoran Development Corporation also has been interested in the development of rubber, derris and other vital war crops at *hacienda* Pichilingue.

Early in 1944 extensive plans for the development of agriculture were

announced by the Ecuadoran Government, but resulting activities were limited. American agriculturists, co-operating with Ecuadorans, continued work at experimental stations on the improvement of coffee, cacao, rubber and other plants. Some importation of blooded stock was begun in an effort to develop disease-resistant cattle and Provincial Development Banks were set up to distribute agricultural credits. A Department of Irrigation and Drainage, established in the Ministry of Public Works, undertook the study of plans for the construction and exploitation of Ecuador's irrigation systems.

The Government decree of January 1945, discussed in connection with Ecuador's industrial development, includes a broad agricultural program. It places particular emphasis on increasing the production of edible oils, wheat, cotton, sugar and hog lard, and the development of the livestock and milk industries.

The past inefficiency of Ecuador's agricultural system has been underlined by the fact that, in that country, where a vast majority of the people are engaged in work on farms, there have been frequent food shortages and malnutrition. Through continued efforts along the lines already undertaken, Ecuador hopes to build for a better-fed, more prosperous nation.

TRANSPORTATION

As the west coast countries strive for agricultural and industrial expansion they find that there is one factor upon which, to a great degree, the success of their programs depends—transportation. Chile has vast lands south of the Central Valley ripe for colonization, yet generally inaccessible; Peru finds her industries in the Amazon basin forced to use Brazilian ports to carry on commerce with the rest of the world; Ecuador sees her Sierra supporting the bulk of her population while the fertile lands of her western coast remain underpopulated and undeveloped. These countries also recognize the potentialities of an increased tourist trade. Improved transportation is thus a vital key to the national prosperity toward which they aim.

Chile. River traffic is of little importance in Chile since only about 450 miles of her streams are navigable even by light steamers. Because of the country's long coast line and narrow width, coastal shipping can serve the country's ports. The merchant marine, which in 1939 constituted 50 ships of 1,000 tons each or more and numerous smaller vessels, operates principally in the coastal trade. During the war Chilean vessels carried a good part of Chile's imports which came primarily from the United States. But it is expected that European ships will resume the voyages to Valparaiso and other Chilean ports, unloading their cargoes which will be picked up by Chilean coastwise vessels and carried to lesser ports not touched by foreign vessels.

Chile's railway system is well organized for its present industrial pattern.

The population and industrial centers concentrated on or near the coast in the Central Valley are served by railroads which run north and south with branch lines into the interior. In addition there are lines which link Chile with Bolivia and Argentina. Most of the 6,000 miles of railroads are steam-operated but extension of electrification is planned. Considerable attention is being given to the building of new rail lines to the north and south, for if the resources of these areas are to be developed adequate transportation facilities are essential. Thought is also being given to the possibility of mass transportation and steps are being taken to augment the use of mechanical freight handling facilities.

Chile's highways also aid in filling its transportation needs. By 1941 there were more than 28,000 miles of road in the country but 11,000 of these are not usable for motor travel during the winter season. In addition to improving these highways, Chile will have to extend them into the south in order to develop its forest resources, and new roads will have to be built in the north to facilitate the movement to port of the products of her mines.

Chile has one domestic airline, the *Línea Aérea Nacional*. Government-owned and controlled, it has a monopoly of domestic air traffic, passenger, mail and air express. An American company, Pan American-Grace Airways, carries the international air traffic. The trend has been toward greater use of air transportation, especially for passengers.

Peru. Although Peru was among the first of the Latin American countries to begin the construction of railroads, progress has been retarded by the mountain barriers which split the country. Because of the limited development of railroads and highways, Peru has depended a good deal on coastal shipping. Generally inadequate transportation facilities, however, have impeded the rapid development of Peru's industries.

In addition to approximately 2,000 miles of railways which Peru now has, new lines are needed to connect the numerous coastal railways and to link the outlying areas with the rest of the country. Also, the rail lines now serving the country require considerable improvement for they are of various gauges and types of construction and are not well integrated.

Progress is being made in the construction of highways under Peru's program of public works. The Peruvian section of the Pan American Highway is now usable throughout its entire length; linking the country's leading towns and ports from north to south, it is the backbone of the country's road system. Raw cotton, sugar, hides and skins, gasoline and oil, and other products can be moved by truck from the areas where they are produced to shipping ports and domestic markets. In the transportation of minerals its usefulness will be limited until connecting roads can be constructed to reach some of the interior mineral producing areas. A recent significant accomplishment has been the construction of the Pacific Ocean-Amazon River highway which has opened up the hitherto inaccessible areas of the east.

Motor vehicle traffic increased steadily in Peru as a result of progress in highway construction and improvement, except during the war, and transportation by motor vehicles is becoming important in the country's economic life.

Peru's dependence on imports for many manufactured articles has made coastwise shipping important. The coastal rivers of Peru are not navigable and inland water transport is confined to the eastern part of the Amazon Valley.

Since Peru is striving to integrate the economy of the interior with that of the coastal region and because inland water traffic is negligible, air transportation is playing an important part in her developmental program. The Peruvian Government Aviation Corporation, known as "Corpac," was created in 1943 to construct and operate Peru's airports and engage in other aviation activities. Improvements have been carried out on numerous airports, including the Arequipa airport and Limatambo airport, Lima's principal civil airport, and further work in this direction is planned.

Ecuador. Because of the difficult nature of the Ecuadoran terrain, the high cost of construction, and shortage of capital, railroads and highways in Ecuador are few. The Guayaquil and Quito Railway is the only line connecting the coastal area with the populated inter-mountain region. Experts have been studying the railways of Ecuador with a view to increasing the efficiency of their operation and it is hoped that now that the urgently needed equipment can be imported some of the problems can be solved. Ecuadoran railway operations were centralized and nationalized by executive decree in June 1944. This move, ostensibly to facilitate more efficient operation of the lines through centralization of control, is part of the growing nationalization program.

Because of the difficulties encountered in building railroads, Ecuador is planning to construct highways to meet its transportation needs. Of an estimated 4,200 miles of road, less than 150 are paved, although a considerable portion have been improved. There is still no road connecting the coast and the Sierra region, but in March of 1944 the Ecuadoran Development Corporation arranged for the construction of highways connecting the ports of Guayaquil, Manta and Esmeraldas with the interior. A comprehensive plan for highway construction is being developed. The country faces tremendous obstacles and the extent to which progress will be made in the coming years will depend upon political and economic factors still unclarified.

An Ecuadoran merchant marine was established by executive decree early in 1944 but there was little public interest in the matter. Later, in April 1946, Ecuador joined with Colombia and Venezuela to form the Flota Gran Colombiana corporation with an initial capital of \$20,000,000. The corporation is to operate a fleet of merchant vessels which, it is esti-

mated, will handle 400,000 tons of the 2,250,000 tons of exports and imports of the three countries.

There has been great demand for air transportation both for international and local travel. Pan American-Grace Airways runs the international plane service and a subsidiary of the company operates the local lines. The latter now provides service between Quito and the three ports of Manta, Esmeraldas and Guayaquil. There are also lines running from Guayaquil to Salinas, Cuenca, Loja and Manta, but the interior region is still virgin territory.

THE TOURIST TRADE

Latin America now has a great opportunity to develop its tourist trade. North Americans, eager for travel after the war-restricted years at home may turn not so much to Europe, now war-torn and depleted, as to the lands in the south.

Chile, Peru and Ecuador have much to offer the tourist. If they can develop facilities for foreign vacationists and publicize them widely, they can build a thriving tourist trade with real economic benefit to themselves.

Chile is already on its way toward becoming a popular tourist country. The Government's Development Corporation is taking an active interest in developing tourist facilities. It has helped to provide capital for the building of hotels and has promoted the improvement of transportation facilities.

In 1938 the Peruvian Government started a program of hotel-building designed to complement its expanding road system. In spite of the fact that the planned construction was impeded by wartime restrictions several new hotels were erected in the provincial towns. When completed, these government tourist hotels are turned over to a company composed of the representatives of banks, transportation concerns, private hotel business and the government. The hotels, in addition to attracting the tourist trade, are enjoying popularity among the Peruvians themselves. The end of the war has given added impetus to the construction program.

Ecuador, too, is being made more attractive to visitors. New roads are being built and railroads extended, while the national tourist bureau, as well as various private agencies, make available to visitors information on planning itineraries, making reservations and the like.

It has been estimated that about a quarter of a traveler's expenditures within a country are made in the purchase of merchandise. All of the west coast countries have a remarkable opportunity to promote and expand their souvenir and handicraft occupations. Ecuador has its Panama hats, its delicately carved ivory nut articles, its balsa wood statuettes, and its exquisitely designed blankets, ponchos, rugs and woolen materials. In Peru there are interesting antiques, beautifully engraved handwrought silver, jewelry

with ancient Inca designs, gaily colored handloomed Indian textiles, pottery, carved chests and tables of rich woods, and baskets and gourds made by the Indians. The favorite articles for the visitors to Chile are the *choapinos*, colorful long-nap rugs made of pure wool and handwoven in beautiful designs, scarfs, bags, belts and sashes. Also there are small articles such as rosaries and necklaces made of horsehair, Indian jewelry, pottery, antiques and handwrought silver and copperware. The production of handicrafts offers a sound base for the development of village industries. In addition to production for export, the tourist trade offers an obvious source for expanded sales of such native products.

Hotels and rooms are another big item in the traveler's expenditures, and on their condition depends much of a country's popularity among tourists. While hotels in the capitals and larger Latin American centers are quite good, those in the smaller towns often provide poor accommodations and food. As finer hotels are built, as roads are improved and their number increased, and as the many attractions of the three countries are publicized, the tourist's dollar will spread its benefits to greater and greater numbers of the people of the three west coast countries.

IMPROVEMENT OF STANDARDS OF LIVING

The raising of living standards is both an end and a means toward the economic stability and progress of the west coast area. A Peruvian railroad maintenance worker who earns about \$20 a month, an Ecuadoran textile worker getting \$15 a month, or a Chilean peasant farmer who has a cash income which does not amount to much more than \$50 or \$60 a year—these and millions like them cannot effectively participate in the economic life of their countries. They have no means with which to purchase and consume what modern industry and science, in the factories and on the land, are capable of producing.

During the war all those who wanted employment could obtain it even though the wages were low by U.S. standards. Actually, the lack of adequate skilled and unskilled labor has been a deterrent to the development of mining, forestry and manufacturing enterprises, as well as to the exploitation of agricultural potentialities. Shortages of labor have occurred in Peru, particularly in the mining industry, because of the more attractive working conditions offered by Government road building, housing and other construction projects. Labor has been drawn away from farms and forests to such an extent that serious dislocations to the country's economy have threatened at various times. Because of this scarcity of labor, increased production must come through more efficient utilization of labor, increased mechanization in industry, in agriculture, and in the mines, and better real incomes for workers. To a lesser extent the same condition has existed at times in both Ecuador and Chile.

Social Measures. Substantial improvement in the standards of living of the mass of workers depends on industrial and agricultural development of the sorts already outlined. To re-enforce these, and to aid lower-income workers in benefiting fully from them, various social institutions, labor organizations and labor laws and social security laws and agencies have come into being. While many of the labor and social security laws are excellent, especially in Chile, administration has been less effective because of inadequate enforcement facilities, and large groups in the population, especially farmers, rural workers and native Indian groups, have received few if any benefits.

Public housing programs were undertaken in each country during the war, notably a Chilean program to build 12,000 new units a year for ten years. Housing progress has been slower in Peru and Ecuador, although some low-cost housing programs have been completed.

Health Services. The level of health of the west coast countries is generally low and has produced workers of low efficiency. Until recently little was done to combat sickness and check the ravages of disease because of the poverty of the vast majority of the population, and the slow development of public health as a profession. Only lately have the governments come to realize the part they could play in alleviating the ills of their people—in part due to aid from the United States. Physicians, nurses and sanitary engineers were sent from the United States to the other American Republics to start many projects. In June 1943 funds were provided to train selected medical and technical personnel so that nationals would be able to carry on the work in their own countries as soon as possible. At the end of two years four hundred Latin American workers had studied or were studying in the United States in the fields of public health, sanitary engineering and medical sciences. Health centers were built, mobile and stationary infirmaries and dispensaries established for isolated or migratory workers and their families, sanitation conditions improved through water supply and sewage disposal projects and port sanitation works, and research and control programs developed on diseases such as malaria, tuberculosis, venereal diseases, yaws and others. General health education also has been part of the co-operative effort.

The funds contributed by the United States are being gradually reduced and may be withdrawn entirely. However, it is expected that the work will be continued by the governments themselves in an ever-increasing public health program.

Co-operative Organizations. The co-operative movement offers a practical method to the west coast countries for helping to meet some of their needs. Co-operatives are particularly applicable to the Indian, among whom collectivism is traditional. By modifying this tradition to modern forms of producer, consumer and credit co-operatives, a vital force can be brought

into play in speeding development activities in the field of agriculture, handicraft and small industries, particularly in the villages.

The Peruvian Government has sponsored a committee on co-operatives to assist them in carrying out commercial transactions under the most advantageous conditions possible.

A system of consumer co-operatives was established in Chile in 1924 to make goods available at lower prices through group buying and direct distribution. These co-operatives received a 25 per cent rebate on all freight carried by the State Railways. In 1939 a new law dealing with agricultural co-operatives for the "small farmer" was promulgated to facilitate crop loans, the purchase of farm machinery, the regulation of production, the rental of draught animals and the improvement of methods for marketing farm products. Chilean co-operatives have grown steadily and by 1940 their membership had totaled 77,850 and their sales for that year amounted to about \$4,250,000.

Immigration and Racial Problems. Until the first World War the governments of the west coast countries assisted and encouraged the immigration of foreigners looking for new lands in which to apply their initiative and labor. The situation then changed as the rise of nationalism and growing industrialization led to a reaction against foreign elements.

The racial problem of these countries and of Latin American countries generally differs from that in other parts of the world. Since the 1920's strong currents have arisen glorifying the Indian. Unfortunately, however, recognition of the values of ancient Indian civilization has had as yet little real effect in the solution of the basic problems confronting the Indian, especially in Ecuador and Peru, with their large indigenous populations. Agricultural as well as industrial development has been retarded by the failure to give sufficient emphasis to the essential needs of Indian life—social and economic opportunities, property rights and protection in the pursuit of agricultural work, the construction of highways to markets and the establishment of means of communication, irrigation works, sanitary and medical services in remote provinces and education. Practical education, especially in the fields of agriculture and livestock, is urgently required. The extension of educational opportunities to the adults and effective extension work on improved farming methods are as important as the provision of wide educational facilities for the children.

In addition to the application of local efforts in the solution of the Indian problem it would be beneficial for each of these countries to return to a freer immigration policy. The Peruvian constitution, for example, not only allows immigration but promotes it. There is a preference for white immigrants, especially farm laborers and skilled industrial workers. Unfortunately, the encouraging attitude of government leaders and official expres-

sions, even in the laws themselves, are not actually permitted to operate fully.

Ecuador has announced that it is in favor of gradual and systematic immigration, though actually its attitude has been restrictive. Preference has been shown for those of Latin stock and the country would like to see its immigrants go into agriculture. Ecuador is currently studying plans to colonize large areas of her territory with immigrants from Europe. The road construction program now under way will open up large rich agricultural areas for the first time and people who will settle in them will be welcomed. Although leading Ecuadorans recognize that immigration will help to improve the country's economy, it is felt that colonization must be carefully thought out and applied, and this attitude has actually severely limited the extent of immigration.

The Chilean constitution opens the gates of the country to all those who for political, religious, or ideological reasons have been persecuted. Yet there exists a series of administrative rulings which tends to restrict immigration and in some instances to prohibit it entirely. More than 3,000 such rulings are in existence and although they have never received legal sanction the country has actually been governed by them under emergency powers. Thus, despite the open door, immigration into Chile has been negligible.

CONCLUSION

The economic development of the west coast countries will of necessity be a gradual process, even under the best conditions. Because of the low purchasing power of most of the people, markets are too small to justify a rapid and large-scale development of industries producing chiefly for domestic consumption. Likewise, raw materials are not always available on a competitive basis. Power is also frequently inadequate to meet requirements. The railroads and port facilities, by and large, are not equipped to handle substantially increased traffic, and roads are neither so few or in such poor condition as clearly to restrict their usefulness. The number of skilled workmen is very small and managerial ability is limited. Moreover, in agriculture, which is so important in the economies of these republics, productivity is generally low because of the absence of modern methods and techniques.

There are also a number of less tangible limitations to any program of rapid economic development. Higher profits are expected by entrepreneurs in these countries, as well as in Latin America generally, than are realized in larger industrial countries. Usually a small volume of business at a high margin of profit is preferred to a large volume at a small margin. Furthermore, there is a tendency among the educated people to regard with disfavor any vocation involving manual labor. Domestic capital has too often

been invested in commodities and real estate, which recently has had large speculative profits, rather than in productive enterprises. Also, protection has been granted to inefficient domestic industries in the form of extensive barriers to international trade, thus raising commodity prices, reducing levels of living, and retarding economic development.

These adverse conditions, however, must not be considered as deterrents to all economic development activities in these countries. Economic development will itself aid in the expansion of domestic markets by increasing purchasing power and creating a middle class which will act as a stabilizing influence on social institutions. Training and experience will provide the requisite technical skills and managerial ability. Experiment stations, demonstration farms and vocational education will improve agricultural methods and techniques and thus effect an increase in agricultural productivity. But these developments will require time. They must be appropriate to the technological development of each of these countries and constitute a part of a gradual political, social and economic evolution.

*THE RIVER PLATE COUNTRIES**by* MIRON BURGIN

The war brought about far-reaching changes in the rate and pattern of production in the River Plate countries. Production of minerals, foodstuffs and other strategic materials was enormously increased, while the flow of goods obtained from abroad was sharply curtailed. These countries, especially Argentina, endeavored to strengthen and to extend the industrial sector of their economies, expanding output in established enterprises and promoting new enterprises for the production of goods previously imported. Although these efforts intensified the demand for imported producers' goods, industrialization did alleviate critical shortages of certain consumers' goods that could not be obtained from abroad. Throughout the war, and especially after Pearl Harbor, the River Plate countries thus experienced a high level of economic activity and employment. However, with the cessation of hostilities accompanied by termination of purchasing contracts and renewal of foreign competition, these countries faced the immediate problem of curtailment of production and readjustment to a new economic environment.

In none of these countries can reconversion to peace-time production be considered apart from the long-range problem of economic stability and improved levels of living. In fact, adequate solution of the problems brought forth by transition from war to peace presupposes the existence of a diversified and a reasonably well balanced national economy. None of the countries of the River Plate, not even Argentina, has attained this stage of development, and in each the concern about post-war readjustments must necessarily transcend the immediate issue of curtailed exports and revived foreign competition.

The war did not bring nearer solution the fundamental difficulties with which the countries of the River Plate had had to cope for the past hundred years. Instability, excessive dependence upon the export of one or two staples, lack of economic integration, low levels of living—all of these characteristics of the River Plate economies remained essentially unchanged throughout the war in spite of the prosperity brought about by higher exports at prices well above prewar levels. In some instances, notably in Bolivia, the war accentuated the century-old problem of economic instability.

It stimulated continued specialization at the expense of diversification, it forced human and material resources into areas of production that were likely to be curtailed or altogether abandoned after the war, it encouraged inflation and thereby induced changes in the distribution of national incomes that were frequently inconsistent with the best interests of the population.

The war did help to focus attention upon the internal maladjustments of the national economies, and to the extent that such maladjustments hindered production of strategic materials, efforts were made at a permanent solution. So, for example, the establishment of the Bolivian Development Corporation was conceived with a view toward a permanent reorientation of the Bolivian economy. In Paraguay long-range programs of highway construction and of improvement of agricultural techniques was undertaken to broaden the base of Paraguayan economy. In Argentina, too, where the war revealed as never before the industrial weakness of the economy, a sustained and not entirely unsuccessful effort was made to strengthen the economic structure of the country and to hold in check the debilitating effects of war induced inflation.

None of the River Plate countries can hope to solve its basic economic problems independently of and apart from the world at large. None of these countries, not excluding Argentina, is sufficiently self-contained to remain unaffected by changes in the outside world. In an unstable world these countries are almost certain to suffer serious setbacks. But even if world-wide stabilization is attained there is no assurance that they will automatically achieve economic security and share fully in the general advance toward higher levels of living.

The specific terms of the problem vary from country to country. In some areas, such as Paraguay and Bolivia, where economic progress has been lagging the essential problem is not so much one of reconstruction and readjustment but rather one of organization of economic development along lines most suitable to geographic environment. In all countries, the ultimate test of the solution is whether and to what extent it promotes more efficient utilization of available human and natural resources and insures higher standards of living of the peoples.

I. ARGENTINA

Of the four River Plate countries Argentina is by far the largest and economically the most important. It occupies an area of over 1,000,000 square miles and its population is estimated at about 14 million. The distribution of the population is rather uneven. A third of the people is concentrated in Buenos Aires and its suburbs, and nearly three-fourths live within a 300-mile radius of the capital. The population is composed of descendants of

early settlers and a large admixture of immigrants predominantly of Spanish and Italian origin. In the period from 1857 to 1939 the net immigration amounted approximately to 3,500,000. Only about 3 per cent of the population is Indian, scattered in the western and northwestern parts of the country.

Agriculture

Until recent years Argentina's economy has been pre-eminently agrarian. A very large proportion of the country's exports consists of the products of agriculture and the grazing industry. Argentina is among the world's leading producers and exporters of wheat. She is the largest producer of linseed and one of the largest producers and exporters of corn. Prior to the war about 75 per cent of corn entering international trade originated in Argentina. Cattle raising occupies an important position in the national economy. A large part of the country's exports, meat products and wool, is derived from stock raising.

One of the most characteristic aspects of agrarian Argentina is the large landed estate (*estancia*). In 1937 only 38 per cent of the ranches and farms were operated by owners. In the grain growing and cattle raising areas the proportion of owner-operated agrarian establishments is considerably below the average. In 1937, of 452,000 farms, 200,000 were operated by tenants and sharecroppers. About four-fifths of the value of agricultural output is produced on tenant-operated farms.

Concentration of land ownership in relatively few hands dates back to the early years of independence. Under the dictatorship of Juan Manuel Rosas the growth of large *estancias* was encouraged by generous grants and frequent sales of the public domain. The fall of the dictator did not interrupt the process. On the contrary *latifundia* continued to grow in size and in number under the liberal regimes which followed Rosas. It is not possible to ascertain the number or size of *estancias* since the census of 1937 classifies all holdings of over 625 hectares under one heading. However, data available for certain provinces are indicative of the pattern of land distribution for large sections of the country. In Buenos Aires, economically the most important state in the Republic, 320 families out of a population of 3,500,000, own more than 10 million acres or 39 per cent of the total area of the province. In the province of Santa Fe there are 189 individual holdings averaging 62,500 acres each. In the province of Entre Ríos with an area of about 7.5 million hectares, 46 rural properties comprised 1.1 million hectares, or about 15 per cent of the total area. Corporate holdings are as a rule much larger than private estates, especially in the southern part of the country.

The owners of large estates have been generally unwilling to sell por-

tions of their holdings in tracts suitable for smaller scale farming operations for the production of dairy or poultry products or to engage in other diversified and more intensive food production. At the same time, the relatively low income and low purchasing power of a large proportion of the urban population has seriously impeded the development of a sufficiently large demand for such products in the domestic market. As a result, much of the agriculture in Argentina has continued to follow the extensive pattern of cultivation, designed for production for export, without development of large areas with more intensive diversified farms producing primarily for domestic consumption, like most of the farms of the United States.

The process of breaking up large landed estates has been extremely slow and difficult. Income and inheritance taxes in Argentina have not been sufficiently high to force transfer of large tracts of land into the hands of small farmer-operators.

Since in the past land has proven to be a profitable investment there is no scarcity of buyers of large estates whether for the purpose of operating them or for speculative purposes. There is thus created an artificial scarcity of land and the growth of a class of small and medium size farm owners has been effectively impeded.

The distribution of ownership in the field of cattle raising is equally unbalanced. In 1937, 5,000 individual and corporate landed estates owned about 43 per cent of the country's livestock. A handful of livestock breeders, 134 to be exact, owned more cattle and sheep than 200,000 small stock raisers put together. However, concentration of ownership in this industry is perhaps more justified inasmuch as stock raising is essentially a large-scale enterprise.

Concentration of land ownership, and the failure to develop an intensive diversified agriculture, has been at least partly responsible for the relatively rapid shift of population from rural to urban areas. In 1914, 58 per cent of the population resided in cities and towns of 1,000 or more inhabitants. In 1938, according to Alejandro Bunge's calculations, the comparable urban population was 74 per cent of the total population. Even more striking are changes in the occupational distribution of the population. According to Bunge the number of persons employed in agriculture in the twenty-five years from 1914 to 1940 increased by about 19 per cent, from 880,000 to 1,050,000. The number of persons employed in industry rose in the same period from 1,246,000 to 2,700,000, or by about 122 per cent. In 1937 there were about 300,000 agricultural enterprises. In the same year 698,000 persons were employed in industry. In 1939 the number of industrial employees and laborers was 747,000. Apparently under present methods of exploitation of land and within the existing framework of land ownership the rural sector of Argentina's economy is approaching the point of demographic saturation.

Industry

Not unnaturally the economic policies of Argentina with respect to industry were influenced by rural interests, specifically by the relatively small group of landowners and cattlebreeders. These groups because they depend so much upon foreign markets are traditionally free traders. They look with distrust upon measures or acts which tend to restrict the free flow of commodities across international boundaries. Since a policy of industrial expansion in Argentina in the past has been predicated upon protectionism of some kind, the attitude of the landowners toward industrialization has been at best unfriendly. This fear was not motivated solely by doctrinal considerations. To the extent that industrialization calls for higher duties to offset the disadvantage of relatively inefficient production it tends to raise the cost of living and therefore also wages within the country and impairs the salability of exports in foreign markets.

The beginning of industrial development in Argentina dates from the 1880's. The decade was one of intensive economic activity throughout the country, but especially in the eastern provinces. Railway construction, immigration and farm settlement provided the basis for sustained prosperity. By 1895, there were over 22,000 manufacturing establishments employing about 147,000, though many of them were small shops.

Except for the financial crisis of 1890 and a brief period of readjustment, industrial expansion continued in the following two decades. In 1914 there were more than 39,000 industrial enterprises with a personnel of 383,500. Again, as in 1895 a large proportion of the establishments were more akin to artisan shops.

World War I with the resulting interruption of international trade and scarcity of manufactured goods fostered a mushroom-like expansion of industry. Old plants increased output and new lines of manufacturing activities were begun. A good part of the gain was wiped out after the end of hostilities as foreign manufacturers again competed in the Argentine market. Nevertheless, some progress had been made and on the whole Argentina emerged from the war with a stronger and more diversified industry than it had ever had before.

The great depression of the 1930's hit Argentina with particular force. Prices of agricultural commodities declined more sharply than prices of industrial goods. Foreign exchange which Argentina derived from exports of grains and meat no longer sufficed to service the country's foreign debt and to cover the cost of manufactures normally obtained from abroad.

In order to safeguard the country's monetary and financial position the Argentine government instituted extensive controls upon transfers of foreign exchange to other countries, and raised tariff barriers. When the country emerged from the depression of the early thirties, Argentine industry surged forward at a remarkable rate. The census of 1935 listed more than

40,000 industrial establishments with a personnel of about 600,000, and a total value of industrial production of about 3,500 million pesos (about \$1,100 million). By 1941, the number of industrial enterprises and of industrial personnel had increased by 50 per cent, and the value of output nearly doubled.

Although 95 per cent of the industrial establishments produced under \$80,000 worth of product each in 1939, a relatively small number of large manufacturing firms was responsible for three-fourths of the total value of industrial production in 1939, and employed more than half of the workers in factories.

By far the most important industries are those engaged in the production of foodstuffs, beverages, tobacco and textiles. The foodstuff group includes the *frigoríficos* which operate largely for export markets. The other industries produce primarily for domestic consumption. In recent years Argentina has developed a sizable chemical industry and is practically self-sufficient with respect to leather and leather manufactures. Argentina has no primary iron and steel industry. There are a number of electric furnaces and rolling mills which operate with scrap and imported pig iron. As measured by value of production this industry and that engaged in the manufacture of machinery and vehicles occupy a prominent place in Argentina's industrial structure.

The rise of Argentine industry since 1935 appears most clearly when its contribution to the national income is compared with that of agriculture. In 1935 the net value of agrarian (i.e., pastoral and agricultural) production was estimated at 2,150 million pesos (about \$700 million), and the net value of manufactures, at 1,380 million pesos (about \$460 million). In 1942 the total net value of production was calculated at 5,350 million pesos (about \$1,800 million) almost evenly divided between agriculture and grazing (2,700 million pesos) and industry (2,650 million pesos). While the net value of agrarian production rose by about 26 per cent, the net value of industrial production during the same period more than doubled. In terms of physical volume expansion of industry was less spectacular, though none the less considerable, the output in 1942 being 50 per cent above that of 1935.

Wartime Developments

The impact of World War II upon Argentina's economy followed a familiar pattern. As in 1914 Argentina was cut off from vital European markets and sources of supplies. But the intensity of the shock of the second world war was much more severe. First, since nearly all of Europe found itself under German occupation, a much larger proportion of markets for Argentine exports became inaccessible. Secondly, shipping was relatively scarcer in the last conflict than in 1914-1918. Thirdly, the flow of manu-

factured goods and raw materials into Argentina was curtailed to a minimum and subjected to strict controls in the principal supplying countries. And finally, preclusive purchases by the United Nations of strategic commodities severely limited Argentina's ability to secure an adequate supply of fuel and raw materials in countries other than those directly involved in the war.

That the economy of Argentina weathered the storm with relative ease was due to a number of circumstances. The loss of overseas markets was fairly gradual and Argentina had time to make adjustments. Until the middle of 1940 a sizable portion of Europe, including Italy, was still open to Argentine exports. Although peace in other parts of the world was tenuous, international trade outside Europe continued until Pearl Harbor. Throughout the war England continued to purchase at profitable prices all of Argentina's exportable surplus of meat products. But more important, the economy of Argentina in 1939 was much better equipped to deal with war difficulties than it was in 1914. In the inter-war period Argentina had developed an industry capable of meeting a large proportion of the domestic demand for manufactured goods. Whereas 58 per cent of goods for consumption were imported in 1914-18, only 26 per cent were imported in 1936-38. In World War II, Argentina found markets in Latin America not only for a portion of the agricultural commodities it normally exported to Europe, but also for any manufactured commodities it was willing to sell. From Latin America, too, Argentina was able to obtain some of the raw materials and fuel she needed.

The demand in Latin America for imported agricultural commodities was far too small to compensate Argentina for the loss of her European markets, and soon after the outbreak of the war huge surpluses began to accumulate. The Argentine government instituted a public purchase program of the most important grains. The prices at which the government bought wheat and corn was not high enough to insure prosperity to the Argentine farmer, but they were sufficient to prevent a major disaster in the agricultural sector of the national economy. At the same time the government encouraged and even required the use of corn and linseed as fuel. In this manner stocks of these grains were kept at relatively low levels and by 1944 were entirely eliminated.

The effects of the war upon industry were much more complicated. Shortages of fuel, raw materials and machinery became very serious soon after the entry of the United States into the war. In an effort to solve the problem of fuel Argentina resorted to substitutes, such as wood, corn and linseed. At the same time the Argentine government encouraged the development of domestic coal deposits, and it sought to secure new sources of supply abroad. With respect to steel strict rationing was instituted and at the same time all available scrap was utilized for conversion in the

country's iron and steel plants. Similar measures were adopted with respect to other raw materials and the use of power and light had to be restricted.

In spite of these difficulties Argentine industry fared remarkably well during the war. Production in old industrial enterprises increased, and new industries appeared to supply commodities formerly imported from abroad. Argentina began exportation of manufactured goods to Latin America on a scale never attempted before.

Expansion of industrial activities in Argentina during the war was encouraged not only by shortages of goods, but also by ample investment capital. Part of the capital originated within Argentina, but much of it came from Europe. In 1939 the influx of foreign funds exceeded outflow by 66 million pesos; in 1940, by 79 million pesos; and in 1941, by about 325 million pesos. A large portion of these funds entered Argentina in search of a safe haven and was not available for long term investment. Nevertheless, to the extent that these funds were used in some sort of investment they contributed to a general cheapening of credit in the Argentine money market and in this manner encouraged expansion of industry. Shortage of machinery and equipment, and shortage of skilled labor were serious handicaps to expansion of production. Yet the demand for manufactures was so insistent that higher costs of production and relatively poor quality of the product could be for the time being safely disregarded.

Industrial expansion together with exports of meat and other strategic materials at favorable prices more than offset the loss of European markets for grain. The country entered upon a period of prosperity that exceeded the level attained in 1937. In 1942 the average monthly industrial employment was 24 per cent above 1937; in 1944, 31 per cent above; and by July 1945, 36 per cent above 1937.

Post-War Prospects

Argentina emerged from the war in relatively comfortable economic circumstances, although under a political cloud. The country has reason to hope that while readjustment to peacetime conditions of production and new world markets may be somewhat painful, it need not cause serious dislocations in the national economy. It may safely assume that resumption of international trade and the opening of European markets will bring about a revival of its exports of grain and wool. Post-war Europe will be a hungry and devastated Europe for some time to come. Argentina with its huge production of foodstuffs should have no difficulties in disposing of exportable surpluses of agricultural commodities. And as the restrictions engendered by the war disappear from the economic horizon, Argentina should find it possible to procure from abroad the essential raw materials which it was denied in recent years and which imposed such a severe strain

upon its economy. The fact that during the war Argentina had accumulated large balances of foreign exchange enables it to face with a fair degree of equanimity the problem of timing of exports and imports. Argentina can well afford to finance essential imports even if foreign demand for cereals does not materialize immediately, or if exports of agricultural products must be undertaken on a deferred payment basis. This is all the more feasible since during the war Argentina succeeded in reducing its requirements of foreign exchange for the servicing of its foreign indebtedness and foreign investments in the country. A large part of Argentina's sterling debt has been repatriated, and some of the foreign enterprises in Argentina have been nationalized.

The industrial sector of the economy is unlikely to escape more or less serious readjustments. Argentine industry enters the post-war era inadequately equipped. Its machinery and equipment is to a considerable extent worn-out and obsolete, its methods of production in many instances antiquated. As other countries enter the world market Argentine industry will face increasing and effective competition both at home and abroad. Internal markets could be safeguarded for domestic industry by appropriate legislation, but whether stringent protectionist policy will be feasible in a world eager to trade is a moot question. Nor is it certain whether Argentina can afford the luxury of a sufficiently effective protection of all its domestic industry and especially of industries that came into being during the war. In foreign markets, at least, the ability of Argentine industry to survive must depend upon its ability and willingness to acquire the necessary technical skill and to make the required capital outlays for modernization of its equipment. Even if Argentine industry does not intend to compete in foreign markets it would have to consider seriously the problem of modernization. For expansion of domestic markets for manufactures is in Argentina to a large extent predicated upon the volume of purchasing power in the hands of consumers. Assuming that in the immediate future no substantial changes will take place in the distribution of the national income, the solution of the dilemma confronting industry appears to rest upon its ability to reduce costs of production.

Foreign competition need not become a serious threat for some time after the war. Reconstruction and reconversion in countries directly involved in the war, and continued shortages of ocean transport, may prolong somewhat the period of scarcities of manufactured goods. Thus Argentine industry may be granted a period of grace and it may utilize that period to adjust itself to the new economic environment either through gradual elimination of inefficient plants and industries, or through reorganization and modernization of production techniques.

Return to peacetime patterns of production in Argentina raises certain fundamental issues. One of these is the position of industry in the national

economy and the relationship between it and agriculture. In the immediate post-war years European demand for foodstuffs should be sufficiently large to prevent accumulation of agricultural surpluses in Argentina. It may be assumed, however, that European countries will make every effort to increase their production of foodstuffs if only in order to save foreign exchange for the purchase of machinery and equipment. The prewar tendency of European countries toward self-sufficiency in foodstuffs may be revived and even intensified. The general lowering of the standard of living in some European countries may, at least temporarily, reduce Europe's total demand for foreign foodstuffs and this in turn cannot but affect the economic fortunes of Argentine agriculture.¹ Should such a decline materialize Argentina would have to consider the necessity of reducing her dependence upon exports of grain. A solution of the problem might be sought in a transfer of surplus agricultural land to stock raising or to more intensive agriculture for domestic consumption. In fact, during the war there was already some shifting of land from agriculture to grazing in response to changes in foreign demand for meat. The circumstance that much of the land suitable for grazing is owned in large tracts should make such a shift in the utilization of land easy to accomplish.

The effects of expansion of stock raising at the expense of grain growing are not difficult to envisage. Stock raising requires a smaller outlay of labor per unit of land than cereal agriculture. Insofar as agricultural land is shifted to stock raising, rural population would tend to move toward cities and towns. While expansion of stock raising might increase employment in meat processing plants, it is questionable whether the additional employment would be sufficient to absorb all of the surplus rural labor.

Argentine industry, if it is to continue to grow, must look to an expanding domestic market since it cannot in the near future compete on a large scale for consumers in foreign lands. An expanding domestic market for manufactured goods can be insured either by raising individual incomes in agriculture and in industry, or by increasing the population, or both. Extension of stock raising in the manner described above would achieve neither of these objectives and would therefore work to the detriment of the industrial sector of the economy.

On the other hand diversification of agricultural production offers greater opportunities for additional investments of capital resources and for more intensive application of labor to land. It involves the opening up of land to new settlers and an increase in the consumption levels of broad strata of the urban population. It calls for a more or less far reaching reorganization of the pattern of land ownership and a simultaneous re-adaptation of

¹ It should be noted, however, that shifts in European boundaries and land reform in Eastern Europe, and efforts toward freer international trade and an expanding world economy, may eventually make European demand for food supplies imported from overseas larger than they were before the war. [Editor's note.]

a large portion of the agricultural sector to the needs of an expanding domestic market.

Thus the central economic problem may be restated in approximately the following terms. The specific weight of industry in the economic equation of Argentina is already considerable and is destined to increase after the war. In fact, continued expansion of industry is the only way in which to safeguard economic stability. It gives promise of improved standards of living. But in order that industry may fulfill its function it must be assured of a growing domestic market. One method of accomplishing this desideratum is to increase the number and the incomes of farmers who under favorable conditions would become consumers par excellence of those commodities that Argentina is most likely to be capable of producing at reasonable prices.

It is at this point that the broadly conceived interests of industry coincide with those of the nation, and that the short-range problem of post-war readjustment merges with the central problem of economic development of Argentina. And precisely because the problem involves the reorientation of the national economy rather than adjustment of temporary or local disturbances it assumes far-reaching political connotations. For it is obvious that whatever the solution it will profoundly affect the interests of every stratum of Argentine society, and that for this reason alone no fundamental solution could be effected within a reasonable period of time solely by economic action.

Any solution which provides for the development of a prosperous industry must at the same time make provision for a thorough re-examination of the very foundations upon which rests the economic structure of the country. This in turn involves a revision of the prevailing pattern of land distribution and land ownership, it calls for a more liberal attitude toward immigration and land settlement, it suggests more or less far-reaching changes in the existing system of taxation, and it implies a policy of industrial development that considers not only what industries are to be established but also where they are to be located.

Recent political changes in Argentina have at times obscured the fundamental economic issues facing the country. Questions of foreign policy in a world at war quite naturally overshadowed the more prosaic and less easily definable issues in the struggle for economic supremacy within the country. Nevertheless, the political changes were themselves conditioned by economic forces. In terms of long-range economic policies the administration which preceded the revolution of 1943 represented a compromise that could not endure. The policy of President Ricardo M. Ortiz was turned to the needs of industrialization of the country. His policy envisaged an economy in which industry was to become the equal of agriculture and stock raising in guiding the economic destinies of the nation. The pro-

grammatic expression of this policy was the plan formulated by Frederico Pinedo which proposed to encourage industrial expansion by means of large-scale housing construction projects, the development of long-term credit facilities and an appropriate commercial policy. The plan failed to win the support of either the conservative agrarian interests or of the Socialist Party, both because it threatened to undermine the economic pre-eminence of the large land owners and because it failed to grapple with the problem of land distribution. The death of President Ortiz and the assumption of the office by Ramón Castillo removed the issue of industrialization from the realm of practical politics. The administration of Castillo reverted to the traditional pattern of economic thinking and was satisfied to accept the risks entailed in a policy of drifting so long as such a policy assured the economic *status quo*.

Such a policy appeared at the time to be justified by precedent and by the uncertain outcome of the conflict in Europe. The government of Castillo could reasonably assume that as in World War I the demand for Argentine foodstuffs would bring economic prosperity to the shores of La Plata and in this manner render the problem of economic reorientation less urgent. A policy of neutrality and watchful waiting seemed all the more prudent, since such a policy could best assure the earliest possible resumption of overseas exports regardless of the outcome of the war.

If the war had ended quickly it might have been possible to disregard the popular demand for a more positive economic policy. But as the war dragged on, and as the pressure on Argentina grew in scope and intensity after the United States entered the conflict, the decision could no longer be postponed.

The revolutionary government which came into power in 1943 attempted to accomplish in a military manner what the administration of Ortiz was unable and the administration of Castillo was unwilling to do. However, the orientation of the economic policy and objectives was above all military and the methods employed in the application of these policies have been patterned upon those of Germany and Italy.

Extreme nationalism and the subordination of the economic life of the country to the state have been characteristic of the revolutionary regime. Extension of government control to large sectors of the economy and encouragement of industrial development designed to enhance the country's military potential submerged temporarily the larger and more permanent economic issues. And it was not until the end of the war became discernible that thought was given to the problem of post-war readjustment and reorganization.

The most explicit statement concerning post-war problems in the revolutionary (Perón) government was the program formulated by the National Post-War Council (Consejo Nacional de Post-Guerra). The Council

recognized the necessity and usefulness of economic planning which in turn cannot be dissociated from social problems. It distinguished between immediate problems of post-war readjustment and full employment and those that relate to the gradual co-ordination of the various sectors of the economy with a view to the more distant future economic development. The policy designed to attain these objectives is to rest upon the principle of economic liberalism guided by the state. The program called for the encouragement of private enterprise, for the exploitation of domestic raw materials and their utilization in domestic industry, and for the expansion of foreign trade. The Council favored a policy of decentralization of industry and called for establishment of manufacturing plants in the vicinity of raw materials. With respect to labor it proposed a broad program of social amelioration and social security, and looked toward collaboration between employers' and employees' organizations.

It is significant that the program formulated by the Council had very little to say about the future of the agrarian sector of the economy. The program did not go beyond stating that immigration should be encouraged. And even here the Council was careful to qualify its recommendation by demanding that immigration be "sane" and that it should be preceded by an increase in levels of living in Argentina. The Council assumed no position with respect to the future development of agriculture. Nor did it express its views on the problem of land distribution. On the other hand, the democratic parties which supported Tamborini for President in the recent election, stressed in their platform "agrarian reforms, including division of unworked lands, establishment of farm colonies and protective legislation for rural workers."

The silence of the National Post-War Council on matters relating to the future of Argentine agriculture may be politically well founded. But however well founded it vitiated the program as a whole and cast doubts upon the soundness of the principles of economic policy enunciated by the Council. To ignore the agrarian question in Argentina is to disregard the very foundation of Argentina's economy, and any solution of Argentina's long-term economic problems cannot but fall short of the goal unless it encompasses all the major fields of economic activities in the country.

The proposals of the National Post-War Council have been expanded and elaborated by the administration of President Perón into a five-year plan. The plan calls for re-organization of the government, intensification and extension of official control over the national economy, expansion of foreign trade, re-organization of the transportation system, encouragement of industry, large-scale colonization, highway construction, irrigation and an intensive technical educational program. The total cost of the plan is reported to be estimated at 6.7 billion pesos. Of this sum public works are accorded 3.5 billion pesos. More than 2 billion pesos is set aside for the

development of fuel and power resources, and 200 million pesos for irrigation and colonization projects.

Among the most important aspects of the plan is expansion of industrial production. The government recognizes that the industrial potentialities of the nation cannot be exhausted within the period planned for, but it is determined to lay the foundation for a broad re-organization and continued growth of the country's industrial structure. Decentralization of industry in the geographical sense of the term is the cornerstone of this phase of the program. It is hoped thereby to create a more propitious economic environment for the emergence of new industries and to insure a more balanced distribution of the benefits engendered by industrialization.

The plan is not confined solely to the economic aspects of national existence. It envisages administrative, political and military reforms on a scale that exceeds anything attempted before. At the same time the plan considers active participation of the state in the nation's economic life as a necessary condition of industrialization. In presenting the plan the government insists that it is not committed to a policy of directed economy. The objective is to attain "an orderly and ordered economy." The state, according to President Perón, is to participate in the economic activities of the nation as a competitor. "It takes products and sells them in the manner that it considers best suited to the interests of the nation."

It is at this point that the economic phase of the plan assumes definite political connotations. The crucial question is what the state conceives to be the interest of the nation. The answer to this question was already partly revealed during the years which immediately preceded the present administration.

II. BOLIVIA

Bolivia, the second largest of the River Plate countries, has an area of 416,000 square miles and a population of about 3.5 million. Approximately 60 per cent of the area is composed of lowlands. The northern lowlands form part of the Amazon Basin, the southeastern lowlands are part of the Chaco area and the River Plate basin. The western part of the country is a plateau (the *altiplano*) at an average elevation of 12,000 feet situated between the two cordilleras of the Andes. The range of the Andes (the *montaña*) which divides the *altiplano* from the lowlands is cut by deep and narrow valleys. More than half of the population is Indian, about a third is mestizo, and less than 15 per cent of the inhabitants are of European, mostly Spanish descent. Distribution of population is rather uneven, ranging from 0.6 per square mile in the tropical lowlands of the Department of Pando to 28.5 inhabitants per square mile in the agricultural Department of Cochamba. For the entire country it averages 8.4.

Agriculture

A very large majority of the population derives its livelihood from agriculture. Yet Bolivia must import foodstuffs from abroad. In most areas the production of foodstuffs is barely sufficient to sustain the local population. Few of the agricultural areas produce a surplus, but lack of adequate transportation facilities makes distribution of such surpluses to urban and mining centers costly and difficult.

Land distribution and land utilization leaves a good deal to be desired. Out of a rural population of about 2.5 million only 90,000 own the land they cultivate. Large landed estates dominate agrarian Bolivia. A part of the land in the estates is usually given in use to *colonos*, principally Indians, who in lieu of rent cultivate the landlord's land or render other services. The *colono* does not exert himself during the time he works on the landlord's land, and the landlord has no incentive to invest in relatively expensive labor-saving machinery. To his own land the *colono* can devote very little time and effort. As a result methods of production are inefficient and output per unit of labor or land is low.

Indian communities in the *altiplano* retain ownership of their land and cultivate it either on an individual or a communal basis. Stock raising and the production of potatoes and other basic crops are the mainstays of these rural communities. These communities are highly self-sufficient and live, so to speak, apart from and outside of the money economy of the country.

Mining

Although agriculture is the mainstay of Bolivian subsistence the country derives a large part of its revenue and most of its foreign exchange from mining. The mining industry directly supports less than 3 per cent of the population, but produces well over 90 per cent of Bolivian exports. By far the most important mineral mined in Bolivia is tin, which in the last two decades contributed about 70 per cent of Bolivian exports.

Three large companies control the production of about 80 per cent of tin. The remainder is produced by medium and small scale enterprises. The largest mining enterprise is the Patiño group, which accounts for about 50 per cent of the total output.

The Bolivian tin ore is complex and requires special treatment in the process of smelting. Since there are no smelters in Bolivia tin must be exported in the form of tin ore or tin concentrates. This adds to the unit cost of production which is already high because of the poor quality of the ore, the relatively low efficiency of labor and high taxes. In world markets Bolivian tin must compete with the Malay Peninsula and the Dutch East Indies where cost of production is considerably lower than in Bolivia.

That Bolivian tin producers were able to maintain their position in world

markets after the crisis of 1929 is to be ascribed largely to the fact that in the 1930's both prices and output of tin were controlled by the International Tin Committee. But even under the protection of the cartel Bolivia was unable to fill its quota of production at prices fixed by the cartel. Moreover, Bolivian tin producers enjoyed the benefits of almost uninterrupted inflation during the last 12 years. This advantage cannot be counted upon to last indefinitely, and when monetary stabilization in Bolivia is realized and the time lag between wages and cost of living is closed the competitive position of the Bolivian tin industry is likely to deteriorate. The threat of foreign competition is all the more real inasmuch as during the war, when Malayan and Indonesian tin fell under the control of Japan, deposits in Africa were developed. It is unlikely that the new tin mines will be abandoned after the war so that Bolivian tin may have to face rather severe competition in post-war world markets.

It is possible, of course, that technological improvements in the operation of Bolivian tin mines and in the recovery of the metal will permit more intensive exploitation of ore deposits and in this manner contribute to the reduction of unit costs. It is also possible that with the development of other sectors of the Bolivian economy the burden of taxation now weighing so heavily upon tin mining may be reduced. Again, it may become possible to improve the preliminary processing of low grade ores and reduce in this manner the cost of transportation from mines to smelters. The future of a large part of Bolivia's tin mining depends upon these possibilities and upon the rate at which they can be realized.

The growth of industry in Bolivia has followed a pattern similar to that encountered in other under-developed countries. Output is limited to essential consumers' goods destined for a restricted market. In some instances, notably in textiles, handicraft industry competes against factories. Costs of production are as a rule high partly because of shortage of skilled labor and also partly because of inefficient mechanical equipment.

Foreign Trade and War Effects

Besides minerals, a small proportion of exports (about 5 per cent) is composed of forest products, such as rubber, cinchona and quinine, foodstuffs and live animals. In exchange Bolivia imports manufactured goods, machinery and equipment for its mining and other industries, and foodstuffs. Before the war the United Kingdom was the most important market for Bolivian exports. The United States was the principal source of the country's imports. Among the other important suppliers were Germany, Argentina and Peru.

During the war the demand for Bolivian minerals and other strategic materials exceeded by far the normal output of the mining and forest industries. In order to increase production it was necessary to divert labor

into mining from occupations that were less essential from the point of view of war requirements. Part of the agricultural labor force was attracted to mines by relatively high wages. This in turn increased Bolivia's dependence upon imported foodstuffs. In addition Bolivia along with other countries of Latin America suffered from curtailed imports of manufactured goods.

The war revealed more clearly than ever before the essential instability of Bolivia's economy. Expansion of the mining industry was from the long-term point of view of Bolivian economy wasteful and dangerous. The immediate benefits derived from high prices and increased revenues could not in the long run compensate the country for the risks involved in making the country more dependent upon an industry whose future was at best doubtful. Wartime expansion of mining and forest industries in Bolivia thus aggravated the economic problem facing the country.

Efforts at Industrial Development

The Bolivian Development Corporation was launched to mitigate these difficulties. The Corporation is financed by the Bolivian government to the extent of \$10.5 million. This fund is to be supplemented by credits granted by the Export-Import Bank for specific projects up to a total of \$15 million. The purpose of the Bolivian Development Corporation is to aid in the development of such activities in Bolivia as would promote greater integration of the economy of the country. Construction of roads linking the agricultural areas in the *montaña* and the lowlands with the food deficit regions of the *altiplano* is among the most important objectives of the Corporation. Other objectives are construction of food processing plants, encouragement of agricultural activities in the lowlands, diversification of agricultural production and dissemination of modern agricultural techniques.

Self-sufficiency in agricultural products would free foreign exchange now earmarked for the purchase of foodstuffs. This exchange could be used to import additional manufactured goods. At the same time increased agricultural production should result in higher incomes and increased purchasing power of the population. Improved levels of living will tend to provide greater stability to internal markets and this in turn will contribute to the stabilization of Bolivian finances.

Whether the whole or part of the program of the Bolivian Development Corporation is possible of realization depends upon several factors: (a) the freeing of foreign exchange by dispensing with the importation of foodstuffs may be an empty achievement unless Bolivia can maintain her position in the export markets for tin; (b) development of agriculture presupposes an appropriate revision of the present system of land distribution and land ownership; (c) expansion of agricultural activities in the lowlands involves a vigorous and far-sighted policy of settlement; (d) since the

program of the Development Corporation is for the long run, its success is predicated upon the willingness and ability of successive administrations to accept and support the general objectives as well as the specific projects undertaken by the Corporation; (e) finally, insofar as the program envisages a broad reorganization of Bolivian agriculture, it must educate the Indian farmer in the employment of modern agricultural techniques.

The program of the Bolivian Development Corporation should, if carried out, ease the problem of readjustment to peacetime production. Even if the program is not completed in the immediate future it will have laid the foundation for eventual integration and stabilization of the Bolivian economy. The task in itself is difficult and complex. It involves not only the linking of the mining and urban centers of the *altiplano* with the agrarian areas of the *montaña* and of the lowlands, but what is perhaps more important it presupposes also a more thorough integration of the great mass of the Indian population into the main stream of economic life of Bolivia.

III. PARAGUAY

Situated north of Argentina, between Bolivia on the east and Brazil on the west, Paraguay extends over an area of approximately 150,000 square miles. The eastern part of the country is an extension of the Paraná plateau which has an elevation of 1,000 to 2,000 feet. The country west of the plateau is a flat plain, a large part of which is inundated during the rainy season. The climate of the country is subtropical. Distribution of rainfall is markedly uneven. The western area has an annual rainfall of about 30 inches, most of it during the rainy season. In the eastern part of the country the rainfall is about 60 inches distributed fairly evenly throughout the year.

The population of Paraguay was estimated in 1941 at about one million. Density varies from 3 inhabitants per square mile in the Department of San Pedro to about 93 inhabitants per square mile in the Department of Paraguari, and averages 7.0 for the whole country. A large proportion of the population is located in the west-central region in and near the capital city of Asunción. Nearly the entire population is of mixed European and Indian origin. The Guaraní language is at least as widely used as the official Spanish.

The fact that Paraguay is the least densely populated of the Latin American countries is to be attributed mainly to the disastrous war in 1865-1870 against Argentina, Brazil and Uruguay. In that war Paraguay lost fully half of its population. Immigration into Paraguay has never been large. Since 1870 only about 50,000 immigrants entered the country, many of whom did not settle in the country permanently.

Paraguay, often referred to as the poorest country in Latin America, is undoubtedly poor and economically backward. The loss of population in

the war of 1865-1870 was, of course, in part responsible for the inability of Paraguay to make more rapid progress. But there were other factors equally important.

Like Bolivia, Paraguay is a landlocked country. It is shut off from the west by the jungles of the Chaco and by the Andes. Its only means of economic contact with overseas markets is by way of the tributaries of the River Plate. The distance between Asunción and Buenos Aires is about 1,000 miles, and goods shipped to and from Paraguay must as a rule be re-loaded at Montevideo or Buenos Aires. This remoteness is especially costly since a good part of Paraguayan exports must compete in foreign markets against similar products exported by Argentina, Uruguay and southern Brazil. Paraguay is forced, therefore, to assume a large part of the cost of transportation to world markets. Within Paraguay, transportation facilities are inadequate—the railway network is only about 750 miles long, and hard surfaced highways hardly existed before 1939. It is principally because of the lack of transportation facilities that large tracts of land, which might be cultivated, are used for stock ranges.

Lack of skills bears its share of responsibility for the poverty of the country. Although the economy of Paraguay is predominantly agrarian, methods of cultivation are inefficient, and equipment and agricultural implements are primitive. As a result farming does not provide an income above the bare subsistence level, and since most manufactured goods must be imported the standard of living of a large majority of the population is one of the lowest in the Western Hemisphere.

Agriculture and Forestry

The economy of Paraguay is predominantly agrarian. The principal agricultural products are cotton which in recent years has become the most important commodity in Paraguayan exports. A part of the cotton is utilized in domestic textile manufacturing plants. Tobacco has been until recently an important crop, but it has given way to cotton. Sugar cane, corn beans, mandioca, rice and fruits are grown almost exclusively for domestic consumption.

Ranching is as important as farming in the economy of Paraguay. According to recent estimates there are about 5 million head of livestock in the country, a large part in large herds. In recent years more than 200,000 head of cattle have been slaughtered annually for domestic consumption and for export. Packing plants produce canned and preserved meat, meat concentrates and meat extracts, primarily for the export market, and provide raw material for the hide and leather industries.

The forest industry is among the most important in Paraguay. In 1943 lumber products accounted for 25 per cent of the total value of production and 33 per cent of the total value of exports. The country depends almost

entirely upon wood and charcoal for its supply of fuel, since there are no native supplies of coal and fuel oil. The most important of the forest products is quebracho extract, made by cutting quebracho logs into chips and by treating the chips in water at high temperatures. Some logs are exported, but most of the export is in the form of extract. Among other forest products the most important are oil of petitgrain distilled from the leaves and shoots of the bitter orange, and *yerba mate* (Paraguayan tea). Paraguay produces about three-quarters of the world's supply of petitgrain, which is used as a base in the manufacture of perfumes.

Industry

Industry in Paraguay is confined largely to the processing of products destined for export. The most important manufacturing plants are *frigoríficos* and quebracho extract plants. Oil of petitgrain is produced in small distilleries located near the sources of supply of the raw material. Recently there were established in the country two cotton spinning and weaving mills with a total of 4,000 spindles and 130 looms. Manufacturing for domestic consumption is confined to small industrial establishments, most of which are not strictly speaking factories but rather handicraft shops.

Mining is of negligible importance. The mineral resources of the country are almost entirely unexplored. Deposits of iron, copper and manganese are reported to be of importance, but no serious efforts have so far been made to exploit these resources. Limestone is quarried exclusively for local consumption.

A large part of the industry is either owned or controlled by foreign capital. This is especially true of the export industries such as the meat industry, the quebracho extract industry and the more important textile manufacturing plants. Two of the three largest meat packing establishments are American and British owned. A large part of the quebracho industry is owned or controlled by Argentine capital. Domestic venture capital is scarce. There are, no doubt, local accumulations of capital, but it is not available for industrial enterprises.

International Trade

Paraguay's exports consist principally of cotton, meat and meat products, quebracho extracts and logs, hides and skins, and *yerba mate*. Before the war these commodities accounted for more than 80 per cent of the country's total exports. Nearly all exports pass through Argentina, and their ultimate destination cannot always be determined. The most important markets are Argentina, the United States and the United Kingdom. From abroad Paraguay imports machinery and equipment, foodstuffs, consumers' goods and fuel. The most important sources of supply are Argentina, the United States and Brazil.

Impact of the War

Dislocations brought about by the war were less severe in Paraguay than in most other Latin American countries. The demand for meat, meat products, hides, and skins increased during the war and Paraguay like Argentina had no difficulty in disposing of its exportable surplus at favorable prices. As before the war cotton, quebracho extract and *yerba mate* continued to be shipped in substantially unchanged quantities to the Argentine market.

Dislocations in shipping services and shortage of manufactured goods were less painful than in a more highly developed economy. Controls and U.S. allocations assured Paraguay of a minimum supply of essential manufactures at reasonable prices. Most of the deficit foods Paraguay could secure without undue difficulties from Argentina or Brazil. Whatever shortages did develop affected a relatively small part of the population, since a large proportion of the people are highly self-sufficient and are, therefore, largely independent of imports.

Nevertheless, Paraguay was not wholly by-passed by the war. War created demand for Paraguayan exports brought about high levels of employment and economic prosperity. Loans from the United States enabled the country to launch a program of highway construction and other badly needed improvements. Thus foreign funds were converted into domestic currency, and since the influx of goods from abroad was appreciably curtailed and since also domestic production was unable to fill the gap created by the decline in imports, prices and cost of living increased rather considerably.

On the other hand the war enabled the Paraguayan government to re-examine the basic difficulties confronting the national economy and to lay the foundation for their eventual solution. A program of highway construction was formulated to link outlying agricultural areas with Asunción, the country's most important domestic market. At the same time an agricultural experimental station was established to improve agricultural techniques and methods of cultivation and thereby broaden and strengthen the agricultural sector of the economy.

Future Prospects and Opportunities

Thus Paraguay enters the post-war period economically better prepared than many of the other American Republics. It faces no serious curtailment of world demand for the commodities it usually exports, unless, of course, economic conditions in Europe and the United States deteriorate into a depression. On the other hand, shortages of manufactured goods and scarcity of shipping are not likely to continue for long after the end of the war, and other things being equal the renewed inflow of manufactured goods will tend to check the process of inflation.

While the war did not aggravate the economic difficulties facing Para-

order to compete against these two countries Paraguay must offer superior opportunities for economic advancement. Paraguay has an abundance of cheap and fertile soil, it has adequate resources as yet untapped. What it must offer in addition is assurance of continued political stability and a program of long-range economic policy that would insure continued expansion of the economy as a whole, and, therefore, also continued improvement of the present standards of living.

IV. URUGUAY

Uruguay, the smallest of the South American republics, is situated on the eastern coast of the Atlantic, north of the La Plata estuary. The country is bounded on the north by Brazil and on the west by Argentina. Its area is about 72,000 square miles. Its eastern and southern regions consist principally of low, grassy plains, while the northern and northeastern parts form an extension of the Paraná plateau, where low ranges covered with forests alternate with broad valleys. The climate is temperate and healthful, and rainfall is well distributed throughout the year.

Uruguay is the most densely populated country in South America. Although immigration was never as rapid as in Brazil and Argentina in the second half of the nineteenth century, the population doubled in size in the period from 1882 to 1908 (500,000 to 1,000,000), and doubled again by 1937. In 1942 the total population of Uruguay was about 2,150,000, or 29 inhabitants per square mile. Nearly one-third of the population is concentrated in Montevideo. More than 90 per cent of the population is of European descent. The rest are mestizos, Indians and Negroes.

Agriculture

The economy of Uruguay is predominantly pastoral. Over three-fourths of the area is given over to grazing, which dates back to colonial times. Because native stock did not produce beef suitable for export markets, *frigoríficos* did not come into prominence in Uruguay for some time after they were well established in Argentina. As the breed of cattle improved the *frigorífico* and production of meat products for overseas markets became dominant.

Cattle breeding reached its high point of development early in this century when the number of beef cattle in Uruguay was calculated at about 8 million. Since alfalfa cannot be widely grown in Uruguay production of the high grade "chiller" beef is not always feasible. On the other hand, the pastures are well adapted to sheep breeding. Before the war the number of sheep in Uruguay was estimated at about 18 million. Wool alone accounts for 40 per cent of Uruguayan exports, while beef and canned beef contribute less than 20 per cent to the total value of Uruguay's overseas shipments.

Crop production occupies a relatively minor position in the economy of Uruguay. Only about 6 per cent of the area is under cultivation. Domestic output of foodstuffs is not sufficient to meet the needs of the population and sizable quantities of agricultural products, including cereals, fruits and vegetables have to be imported.

Industry

In spite of the fact that its economy is essentially agrarian Uruguay has succeeded in developing a sizable industry. In 1936 the country had about 11,500 industrial establishments employing about 80,000 laborers and about 10,000 salaried employees. The gross value of industrial production was valued at approximately \$216 million. The food processing industry, including meat packing plants accounted for 41 per cent of total value of industrial production, public utilities contributed 30 per cent, the textile and beverage industries accounted for 8.5 per cent each, and leather, clothing and metal manufacturing for most of the remainder.

Most of the manufacturing establishments are small in size and cannot strictly speaking be termed industrial plants. Of the 11,500 enterprises listed in 1936 only 16 employed more than 500 wage earners each, and only 99 had a labor force of 100 workers or more. On the other hand, 8,400 enterprises employed 3 workers each, 1,940 establishments had a labor force of between 4 and 9 employees.

Nearly three-quarters of the raw materials used by the Uruguayan industry is of domestic origin. Meat packing and refrigerating, tanning, spinning, cement and building materials, are based exclusively upon nationally produced raw materials. On the other hand, the tobacco industry, metal manufacturing, the paper and chemical industries depend upon imported raw materials.

Foreign Trade

The pastoral character of Uruguayan economy is reflected in foreign trade. Normally over 80 per cent of Uruguayan exports consist of products of the stock raising industry, farm products account for about 8 per cent and minerals, fish and miscellaneous take up most of the remainder. In the decade preceding the war wool exports gained in importance at the expense of meat and meat extracts. Uruguay imports a variety of manufactured consumers' and producers' goods, certain foodstuffs including coffee, sugar, edible oils and *yerba mate*, and raw materials for its industries. In normal years Uruguayan exports exceeded imports, and in the three years preceding World War II export balance ranged between 10 and 13 million dollars. Before the war Europe was the most important market for Uruguayan exports. United Kingdom alone purchased more than 25 per cent of Uruguay's export.

State Intervention

Early in this century the Uruguayan government under José Battle y Ordóñez launched a program of state ownership and state operation of important commercial and industrial enterprises. In the ensuing thirty years the program expanded into many sectors of the national economy and at present the Uruguayan government and its agencies directly influence a large part of the economic life of the country. State monopolies supply electric light and power, and operate the telephone service and the mines, the Montevideo docks and port services; the casinos and a number of hotels, (both important sources of revenues due to the large tourist traffic from Argentina); and social and commercial insurance. The principal commercial fishing enterprise is owned and operated by a government agency, the SOYP (Servicio Oceanográfico y de Pesca). This agency operates also a fish cannery, a warehouse, an ice factory and a processing plant. In 1928 the state entered the meat freezing business and is now the leading producer of meat products. The Instituto de Química Industrial established in 1912 as a research organization, has since branched out into industrial activity. It now supplies a substantial part of the domestic demand for fertilizers, sheep dips, insecticides and industrial chemicals.

In the early thirties the Uruguayan government undertook the manufacture of cement and it established an autonomous agency for the production of alcohol and for the distribution of fuel. Shortly before the war the government erected a modern refinery and entered into an agreement with private oil companies providing that all gasoline sold in Uruguay should be refined in the government refinery.

War Effects and Future Prospects

The war produced no major dislocations in the economy of Uruguay. The quantities of exports continued as prewar, while quantities of imports of manufactured goods declined materially as a result of shortages in the supplying countries. With higher prices, however, the value of exports doubled, and the value of imports increased by half. The excess of export values over imports resulted in the accumulation of large balances of foreign exchange which, converted into domestic currency, exerted pressure upon prices of goods and services. The rise in prices was fairly general, but prices of imported goods rose on the whole faster than prices of domestically produced goods and prices of exports, which worked to the disadvantage of Uruguay. In many cases scarcities, especially of fuel and goods subject to export controls, were nearly absolute, and impeded orderly economic development.

On the whole Uruguay can view the problem of readjustment to peacetime conditions of production and trade with a certain degree of confidence. It may be reasonably assumed that the demand in Europe for Uruguayan

principal exports will eventually return to prewar levels, and that prices of imported industrial goods will be brought into closer accord with agricultural prices. Should reconstruction in Europe and, therefore, demand for Uruguayan exports be delayed, Uruguay need not suffer unduly since it can use foreign exchange accumulated during the war to finance urgently needed imports. It is probable that Uruguay will continue to exercise control over exports through allocations of foreign exchange, and it is likely, also, that in general imports will be confined to goods deemed essential to the functioning of the national economy. Producers' durable goods, such as new machinery and replacement parts, transportation materials, fuel and raw materials will, in all probability, have first claim upon the country's foreign exchange.

The long-term problem of the future development of the national economy is fundamentally one of raising the standard of living by means of more effective use of the country's natural resources and increased productivity of labor. This calls for a re-examination of the prevailing distribution of land among the various fields of production as well as a review of the manner in which the land is used. Expansion in the stock raising industry appears to lie in the direction of technological improvement rather than extension of the pasture area. With respect to farming, possibilities of expansion appear to be much more ample. Methods of cultivation are antiquated and in many areas lack of rotation of crops has led to exhaustion of land. Uruguay does not now produce all the foodstuffs it requires. Expansion of the area given over to agriculture with intensified farming and greater emphasis upon the production of dairy products and vegetables appear desirable. Such a development appears all the more desirable since expansion of diversified and intensive agriculture increases opportunities for additional employment. This aspect of the problem is all the more important inasmuch as the possibilities of useful and economically justifiable expansion of manufacturing industries in Uruguay are of necessity limited.

SUMMARY AND CONCLUSION

The practical problems in pushing forward agricultural and industrial development vary widely from country to country and region to region. Pre-war northwestern Europe was a highly industrialized area, comparable in many respects to the northeastern U.S.A. and eastern Canada. The first job that faces the countries in this region is to get back to where they were before the war. This involves not only making good the wartime destruction, particularly in industry, transportation facilities and housing, but also developing new trade relations to replace those which used to exist with Germany. The defeat of Germany and the restriction of her post-war industries and income will necessitate a profound realignment in the economies of other countries for which she was formerly both an important supplier and a major market. This problem is peculiarly acute for the Low Countries, the Scandinavian Countries, and some Eastern European countries.

In Germany and Austria themselves, the reconstruction of their economies within the limitations of the peace will be a slow and difficult undertaking. Their initial recovery has been slowed down by military occupation and the cutting up of each country into almost water-tight occupation zones. Deliveries of industrial equipment and products on reparations account are also inhibiting factors to prompt recovery. If freer trade does develop with the Balkans, Austria may be better able to re-establish her position as the mercantile and financial center of southeastern Europe than she was during the inter-war period. Germany, with restricted boundaries, reduced resources, heavy obligations for reparations in kind and labor, decimated manpower, leaderless people and limited industries, must ultimately develop new light industries to pay for essential raw material and fabricated imports. More than any other nation, Germany's hope of eventual economic salvation depends on opportunity to develop new trade relations to make the most of her remaining resources within the limited spheres permitted her.

Further eastward, eastern Europe and the Balkans face the problem of reorienting themselves between the lessened German power to their west, and the vastly increased Soviet economic potential to their east. This region of eastern Europe as a whole—as large in total population as all western

Europe—is one where improvements in agricultural technology and industrial development can do much to raise standards of living which have been chronically low in the past. With new governments more representative of the mass of the people, stimulated by the example and leadership of the U.S.S.R., and aided by the many new specialized international agencies now being created to aid economic progress, and possibly by direct industrial and economic assistance from the Soviet Union, this region may go far in the years ahead.

The U.S.S.R. itself, strengthened by boundary changes and with new confidence in its demonstrated ability to defend its system against attack from the outside, is likely to continue its previous rapid economic growth, and to expand its economic co-operation with other countries, particularly in eastern Europe. As rapidly as the war damages are made good, the Soviet Union will begin a vigorous rise above the prewar standards of living of its own citizens.

The countries of the Mediterranean Basin somewhat resemble the Balkans in their previous limited development, and in the adoption of autarchic policies in the inter-war period which maldirected their industry and agriculture into lines for which they were not well suited. Once the ravages of civil or world war can be made up in these regions, and stable and popular governments can be re-established, they should be able to benefit from world technical and financial help in improving their industry and agriculture and, in the more eastern regions, in starting to really modernize their countries.

In Asia, the problems of adequate food for the teeming millions and of industrial development to absorb the surplus populations are pressing. Detailed national plans for industrial development are going into action in China. Parallel plans are under active discussion in India. While India and China have both made much progress, the problem remains, especially in India, of whether economic development can outrun the growth of population sufficiently to make genuine improvement in living standards possible.

The reduction of Japan's importance as a source of industrial supplies and as a market for products, and the greater importance of Soviet influence, may call for modifications in market areas and trade in the Pacific in *much the same way as the waning of Germany affects Europe.*

The tropical regions of southeast Asia, Oceania, and the Caribbean region have been made familiar by campaigns and battles. Their people have been stirred by these same developments and in many cases are no longer satisfied to remain merely colonial possessions. The change to freedom from old trade connections, as in the Philippines, may involve profound economic readjustments.

The undeveloped portions of South and Central America are largely north of the South Temperate Zone. Though these countries were spared

invasion or direct combat, they have been stirred by the economic repercussions of the war, and by present-day appeals to the interests of the common man. These countries, too, are largely countries of little industrial development and mostly primitive or colonial agricultures. They too have great opportunities for modernization and growth in the years ahead. In many tropical regions the people have been weakened both by chronic malnutrition and by debilitating endemic diseases, notably malaria. In such regions measures to improve the health of the population are a necessary prerequisite and accompaniment of measures for economic development.

The self-governing British Dominions—South Africa, Australia, New Zealand, and Canada—have been stimulated by war to new development, industrial and agricultural. Widely separated in space, but with high standards of production and of living (except for the native non-white populations), they face varied problems in adjusting themselves to the new world with Germany and Japan vanquished, the U.S.S.R. and U.S.A. greatly strengthened, and with a new emphasis on economic development in many of their neighbors.

Effective development in many of the less advanced regions depends in part on the great powers giving up past imperialistic traditions under which their colonies were looked upon largely as low-cost suppliers of raw materials, and colonial industrial development discouraged. The past exploitation of many such colonial regions is indicated by the fact that year after year the value of their exports ran far above the value of imports. The United Nations have given promises in the United Nations Charter that non-self-governing territories will be assured political, economic, social and educational advancement, opportunities for growth toward self-government, and aid in constructive measures of development. Yet today armed force is being used to restore white supremacy over many areas just recently liberated from Axis control. If these undeveloped regions are to move forward to their full potentials as participants in world economic affairs, as consumers as well as producers, the old exploitative and repressive attitudes to their development must be abandoned, the advanced nations must recognize that they have far more to gain from prosperous customers than from wretched serfs, and the great promises of "securing, for all, improved labor standards, economic advancement and social security" must be carried into vigorous action.

Industrial development of undeveloped nations aids advanced countries as well as the undeveloped. The foreign trade of the U.S.A. is an illustration. Canada has developed to the place where her industrialization is nearly as high as that of the United States. Canadian incomes per capita average as high as ours. Almost every product Canada produces for domestic use or export is also produced in the U.S.—wheat, beef, tobacco, apples, cotton and wool textiles, farm machinery, automobiles. Yet because of their

high buying power, Canada is a great market for U.S. products. During the years between the two world wars, the exports of the U.S. to Canada ran larger than our exports to all the rest of the American hemisphere combined. The 11 million prosperous people north of our border made a better market for American goods than did the entire 140 million Latin Americans south of the Rio Grande. Industrialization, by increasing the prosperity of other nations, enables them to buy more from us as well as to sell more to us. The potential gain to advanced nations from this increased interchange of goods, both ways, is far greater than the gains which limited groups of their population have drawn in the past from colonial exploitation.

This book has sketched the problems, aspirations, and plans of representative countries in their struggle for prosperity. It is clear that the world can use, and well use, great sums of money for reconstruction, modernization and industrialization—sums not only in the billions of dollars, but in the tens of billions. Contrasted to these needs, the seven or eight billions with which the new International Bank opens its doors is small indeed. Yet even that amount, lent out promptly at reasonable rates and for promising projects, could help start a wave of development and world recovery which would in turn encourage nations to provide larger funds for still more development.

Though the needs of peace are large, they are small compared to the needs of war. The United States alone has spent on each major war ten times as much as on the preceding war—3 billions on the Civil War, 32 billions on World War I, and now 325 billions on World War II. While the atomic bomb makes abhorrent the thought of a World War III, the experience of the past suggests that the financial burden of another world war would be equally obliterating. Compared to what we have spent to win the war, and what another world war might cost us, our plans for investment in the peace seem puny indeed.

The United States and the other United Nations have co-operated strongly in building a world structure of organizations to make and keep the peace. We must not again be too little and too late. Now that we have the international institutions, let us equip them and use them to the full extent necessary to face and solve the problems of moving forward to lasting peace and prosperity.

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